

**CITY OF WEST DES MOINES
BOARD OF ADJUSTMENT COMMUNICATION**

Meeting Date: December 3, 2014

Item: Verizon Cellular Communication Tower, 801 S. 19th Street – Reduce the rear yard setback from 54.00 feet to 42.00 feet and reduce the south side yard setback from 54.00 feet to 44.00 feet for construction of a cellular communication tower – VAR-002533-2014/PC-002415-2014

Requested Action: Approval of Variances
Approval of a Permitted Conditional Use Permit

Case Advisor: Kara Tragesser, AICP 

Applicant’s Request: The applicant, Verizon Wireless, represented by Rob Viera of Buell Consulting, is requesting approval to construct a 125 foot monopole-style cellular tower and associated equipment at 801 S. 19th Street (see Attachment C: Location Map, Attachment D: Site Plan, and Attachment E – Photo Simulation). The applicant also has requested variances for setbacks to accommodate the location of the tower. The setback variances include a 12 foot variance of the rear yard setback and a 10 foot variance of the side yard setback along the south.

City Council Subcommittee: This item was presented to the Planning and Development City Council Subcommittee on September 11, 2014; no comment was made on the project. Projects for consideration by the Board of Adjustment generally are presented to the subcommittee for information only.

Staff Review and Comment: This request was distributed to other City departments and other agencies for their review and comment. Please note the following:

- The tower construction will be a monopole-style design with interior antenna. Attached are renderings of the tower height on the site (See Attachment E – Photo Simulations).
- The tower is designed to accommodate two additional sets of antennas or at least one other provider. Staff encourages co-location opportunities.
- The maximum height permitted within a General Industrial zoning district is 60 feet, however; an additional 12 feet of height is permitted for each additional 10 feet of setback provided.
- This tower is proposed to be shorter (at 125 feet) than the 150 feet tower located on the property adjacent to the north.
- The location of the tower on the site allows access to the tower via the existing drive.
- Setbacks Variance Request. The table below provides the setback requirements for this parcel. The requirements for the zoning district, the requirements for a 125 foot pole, and the variances needed.

	General Industrial District Setbacks	Setbacks Required for 125 foot pole	Pole Setbacks	Variances of setbacks
Front	40’	54.00’	208.5	0’
Rear	35’	54.00’	42.00’	12.0’
North	0’	54.00’	199.2’	0’
South	0’	54.00’	44.00’	10.0’

Variance Findings. Title II of the City Codes discusses the variance procedure. All five (5) of the following conditions must be met in order to grant a variance. Based upon a review of the submitted variance request, staff has made the following findings on the proposed project:

1. That the proposed development or use is consistent with the West Des Moines comprehensive plan and any applicable subarea plan. *The proposed location is zoned General Industrial which is identified as an appropriate zoning designation for the location of transmitting and receiving towers and is one of only three zoning districts where communications towers are allowed (the others are Light Industrial and Open Space).*

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- The maximum height permitted within a General Industrial zoning district is 60 feet, however; an additional 12 feet of height is permitted for each additional 10 feet of setback provided.
- This tower is proposed to be shorter (at 125 feet) than the 150 feet tower located on the property adjacent to the north.
- The location of the tower on the site allows access to the tower via the existing drive.
- Setbacks Variance Request. The table below provides the setback requirements for this parcel. The requirements for the zoning district, the requirements for a 125 foot pole, and the variances needed.

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Variance Findings. Title II of the City Codes discusses the variance procedure. All five (5) of the following conditions must be met in order to grant a variance. Based upon a review of the submitted variance request, staff has made the following findings on the proposed project:

1. That the proposed development or use is consistent with the West Des Moines comprehensive plan and any applicable subarea plan. *The proposed location is zoned General Industrial which is identified as an appropriate zoning designation for the location of transmitting and receiving towers and is one of only three zoning districts where communications towers are allowed (the others are Light Industrial and Open Space).*

2. That there are special circumstances or exceptional characteristics applicable to the subject property with regard to size, shape, topography or location, which do not apply generally to comparable properties in the same vicinity and zones. *Verizon Wireless indicates a need for communications coverage in this area. There is a cellular tower located on the property to the north, but that tower is at capacity for the number of antenna it is designed to carry. This property is one of several smaller general industrial sites where variances are needed to be able to accommodate communication towers without rendering the balance of the site as unbuildable. There are only three zoning districts that allow a permitted conditional use permit for communications towers; this property is located in one of three zoning districts. The proposed location of the tower site is reasonable given the location of an existing building on the site and an access drive on the south side of the building that will provide access to the tower location. The City encourages communications towers in these industrial zoning districts which are more likely to need variances due to size of the properties to accommodate a communications tower which can handle more than one carrier.*
3. That the strict application of the zoning regulations as they apply to the subject property will result in practical difficulties or unnecessary hardships inconsistent with the general purpose of such regulations provided that such hardships shall not be self-imposed by the applicant or his or her successor in interest. *The strict application of the code would render the site unsuitable to construct a communications tower. The result is an apparent gap in cellular coverage in this area as no alternate location is available in the same vicinity which would allow the applicant to meet setback requirements. There is an existing building on the site that limits where on the site the tower could be located. The City encourages communications towers in these industrial zoning districts which are more likely to need variances due to size of the properties to accommodate a communications tower which can handle more than one carrier.*
4. That there have been no changes in the character of the site or its surroundings which detrimentally affect the environment. *The area is a general industrial area suitable for transmitting and receiving towers. There is no projected detriment to the environment by locating a tower on this property,*
5. That the granting of such variance does not, under the circumstances and conditions applied in the particular case, adversely affect the health or safety of persons, is not materially detrimental to the public welfare, nor injurious to nearby property or improvements. *The proposed variance does not appear to adversely affect the health or safety of person, does not appear to be materially detrimental to the public welfare, nor injurious to nearby property or improvements.*

Staff Recommendations and Conditions of Approval for the Variances: Based upon a review of the proposal, a finding of consistency with the goals and policies of the Comprehensive Plan and compliance with the findings necessary for approval, staff recommends the Board of Adjustment adopt a resolution for approval of variances of 12.00 feet of the rear yard setback and 10.00 feet of the side yard (south) setbacks.

Permitted Conditional Use Permit Findings: Verizon Wireless' application for a Permitted Conditional Use Permit to construct a 125 foot tall stealth monopole style cellular tower and associated structures at 801 S. 19th Street was reviewed by various City departments. Based upon that review and any conditions of approval, the following findings have been made on the proposed project:

1. The proposed development and use is consistent with the West Des Moines Comprehensive Plan in that the project has been reviewed for consistency with the Comprehensive Plan. Based upon that review, a finding has been made that the proposed project is consistent with the Comprehensive Plan in that the project is consistent with all of the goals and policies of the Comprehensive Plan.
2. The proposed development and use does assure compatibility of property uses within the zone and general area in that this project was reviewed by various City Departments for compliance with the Zoning Ordinance.
3. All applicable standards and conditions have been imposed which protects the public health, safety and welfare in that this project was reviewed by various City Departments and public agencies for compliance

with the various state and local regulations. Based upon that review a finding is made that the project has been adequately conditioned to protect the health, welfare, and safety of the community.

4. There is adequate on-site and off-site public infrastructure to support the proposed development in that this project was reviewed by various public agencies and City Departments and public utilities to ensure that either the petitioner will construct or the project has been conditioned to construct adequate public infrastructure to serve the development.
5. The proposed development and use has met the requirements contained in the City Code in that this project was reviewed by various City Departments and public agencies and the project has complied with or has been conditioned to comply with all City Code requirements.
6. The proposed development and use is in keeping with the scale and nature of the surrounding neighborhood in that the proposed project is consistent with the Zoning regulations and the Comprehensive Plan which designates this site as suitable for development such as that proposed by this project.

Staff Recommendations and Conditions of Approval for the Permitted Conditional Use Permit: Based upon the review of the proposal, a finding of consistency with the goals and policies of the Comprehensive Plan, and compliance with the findings necessary for approval, staff recommends the Board of Adjustment adopt a resolution for approval of the Permitted Conditional Use Permit to construct a 125 foot cellular monopole-style tower and associated equipment shelter at 801 S. 19th Street, subject to meeting all City Code requirements, regulations, and the following:

1. The Board granting the necessary variance of required setbacks;
2. No lighting or signage, except to meet Federal, State, or other regulatory requirements shall be permitted;
3. Prior to receiving a building permit, the applicant must execute a standard non-interference agreement.
4. The applicant acknowledge future co-locations of cellular antennae and equipment shelters will require review and approval of a Minor Modification.

Noticing Information: On November 14, 2014, notice of the December 3, 2014, Board of Adjustment Public Hearing on this project was published in the Des Moines Register Community section. Notice of this public hearing was also mailed to surrounding property owners within 370 feet of the subject property on November 13, 2014.

Applicant/Representative: Verizon Wireless
c/o Buell Consulting
5096 Merrimac Lane N
Plymouth MN 55446
612-801-2228
Rob Viera, Buell Consulting

Property Owner: Jim Belisle
910 Briar Ridge
West Des Moines IA 50265

Attachments:

- | | | |
|--------------|---|--------------------------------------|
| Attachment A | - | Variance Resolution |
| Attachment B | - | Permitted Conditional Use Resolution |
| Attachment C | - | Location Map |
| Attachment D | - | Site Plan |
| Attachment E | - | Photo Simulation |

Prepared by: KTragesser, West Des Moines Development Services PO Box 65320 West Des Moines IA 50265-0320 515-222-3630
When Recorded, Return to: City Clerk, City of West Des Moines PO Box 65320 West Des Moines IA 50265-0320

RESOLUTION

A RESOLUTION OF THE BOARD OF ADJUSTMENT OF THE CITY OF WEST DES MOINES, APPROVING THE VARIANCE REQUEST (VAR-002533-2014) FOR A 12 FOOT VARIANCE OF THE REQUIRED 54 FOOT REAR YARD SETBACK AND A 10 FOOT VARIANCE OF THE REQUIRED 54 FOOT SIDE YARD SETBACK FOR THE CONSTRUCTION OF CELLULAR COMMUNICATION TOWER

WHEREAS, pursuant to the provisions of Title 9, Chapter 1 et seq, of the West Des Moines Municipal Code, the applicant, Verizon Wireless, has requested approval of variance from Chapter 9, Section 7-4, Minimum Setbacks, of 12 feet of the required 54 foot rear yard setback and 10 feet of the required 54 foot side yard setback to allow for the construction of a cellular communication tower at 801 S. 19th Street which is legally described as:

Legal Description of Property

THE SOUTH 25 FEET OF LOT 30 AND ALL OF LOT 31 AND LOT 32 OF WEST GRAND INDUSTRIAL ACREAS PLAT 2, NOW IN AND FORMING A PART OF THE CITY OF WEST DES MOINES, POLK COUNTY, IOWA

WHEREAS, studies and investigations were made, and staff reports and recommendations were submitted which is made a part of this record and herein incorporated by reference;

WHEREAS, on December 3, 2014, the Board of Adjustment held a duly-noticed public hearing to consider the application for a variance;

NOW, THEREFORE, THE BOARD OF ADJUSTMENT OF THE CITY OF WEST DES MOINES DOES RESOLVE AS FOLLOWS:

SECTION 1. The findings, for approval in the staff report, or as amended orally at the Board of Adjustment hearing, including any conditions of approval in Exhibit A are adopted.

SECTION 2. A 12 foot variance of the rear year setback and a 10 foot variance of the side yard setback is hereby granted.

PASSED AND ADOPTED on December 3, 2014.

Jennifer Drake, Chairperson
Board of Adjustment

ATTEST:

Recording Secretary

I HEREBY CERTIFY that the foregoing resolution was duly adopted by the Board of Adjustment for the City of West Des Moines, Iowa, at a regular meeting held on December 3, 2014, by the following vote:

AYES:
NAYS:
ABSTAIN:
ABSENT:

ATTEST:

Recording Secretary

Prepared by: KTragesser City of West Des Moines PO Box 65320 West Des Moines, IA 50265-0320 515-222-3620
When Recorded Return to: City Clerk City of West Des Moines PO Box 65320, West Des Moines, IA 50265-0320

RESOLUTION

A RESOLUTION OF THE BOARD OF ADJUSTMENT OF THE CITY OF WEST DES MOINES, APPROVING THE PERMITTED CONDITIONAL USE PERMIT (PC-002415-2014) FOR THE PURPOSE OF CONSTRUCTING A 125 FOOT TALL STEALTH MONOPOLE STYLE CELLULAR TOWER AND ASSOCIATED EQUIPMENT SHELTER AT 801 S. 19TH STREET

WHEREAS, pursuant to the provisions of Title 9, Chapter 1 et seq, of the West Des Moines Municipal Code, the applicant, Verizon Wireless, has requested approval for a Permitted Conditional Use Permit to construct a 125 foot tall stealth monopole style cellular tower and associated equipment shelter at property located at 801 S. 19th Street and legally described as:

Legal Description of Property

THE SOUTH 25 FEET OF LOT 30 AND ALL OF LOT 31 AND LOT 32 OF WEST GRAND INDUSTRIAL ACREAS PLAT 2, NOW IN AND FORMING A PART OF THE CITY OF WEST DES MOINES, POLK COUNTY, IOWA

WHEREAS, studies and investigations were made, and staff reports and recommendations were submitted which is made a part of this record and herein incorporated by reference;

WHEREAS, on December 3, 2014, the Board of Adjustment held a duly-noticed public hearing to consider the application for Permitted Conditional Use Permit;

NOW, THEREFORE, THE BOARD OF ADJUSTMENT OF THE CITY OF WEST DES MOINES DOES RESOLVE AS FOLLOWS:

SECTION 1. The findings, for approval, in the staff report, or as amended orally at the Board of Adjustment hearing, are adopted.

SECTION 2. The PERMITTED CONDITIONAL USE PERMIT (PC-002415-2014) is approved, subject to compliance with all the conditions in the staff report including conditions added at the Hearing, and attached hereto as Exhibit "A", if any. Violation of any such conditions shall be grounds for revocation of the entitlement, as well as any other remedy which is available to the City.

PASSED AND ADOPTED on December 3, 2014

Jennifer Drake, Chairperson, Board of Adjustment

ATTEST:

Recording Secretary

I HEREBY CERTIFY that the foregoing resolution was duly adopted by the Board of Adjustment for the City of West Des Moines, Iowa, at a regular meeting held on December 3, 2014, by the following vote:

AYES:
NAYS:
ABSTAIN:
ABSENT:

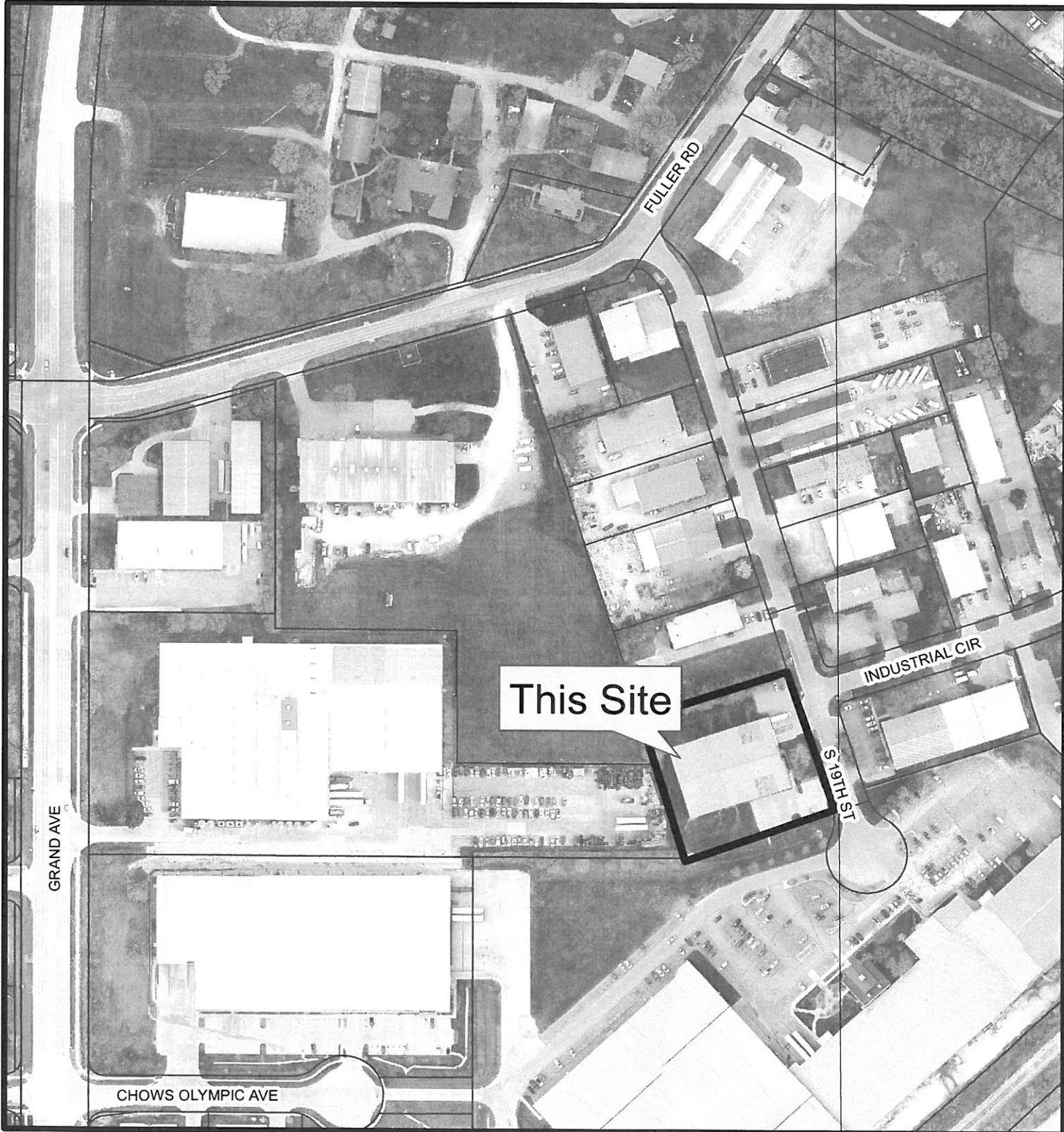
ATTEST:

Recording Secretary

EXHIBIT A

1. The Board granting the necessary variance of required setbacks;
2. No lighting or signage, except to meet Federal, State, or other regulatory requirements shall be permitted;
3. Prior to receiving a building permit, the applicant must execute a standard non-interference agreement.
4. The applicant acknowledge future co-locations of cellular antennae and equipment shelters will require review and approval of a Minor Modification.

General Location Map 801 S. 19th Street



No Scale





10801 BUSH LAKE ROAD
BLOOMINGTON, MN 55438
Phone: 952-946-4747

LOCATION NUMBER: 276206 SITE NAME: DES JORDAN TRAIL

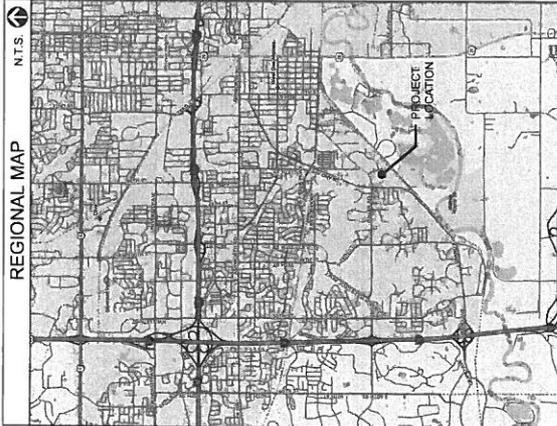
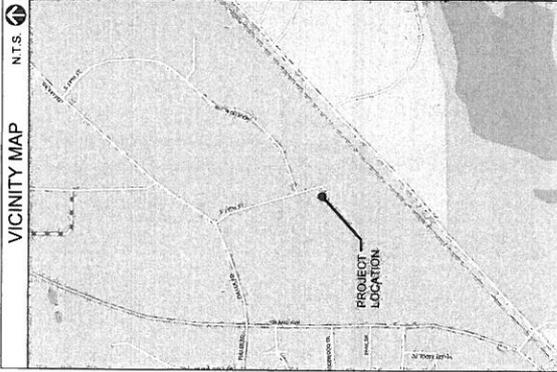
PROPOSED LESSEE ANTENNAS MOUNTED ON A NEW 125' STEALTH
MONOPOLE TOWER WITH PROPOSED EQUIPMENT ENCLOSURE AT BASE.

CONSULTANT TEAM

PROJECT CONSULTANT:
TERRA CONSULTING GROUP, LTD.
400 BRASSE, INDIANAPOLIS, IN 46204
PARK RIDGE, IL 60068
(647) 894-4400

SITE ACQUISITION:
BUELL CONSULTING, INC.
1000 W. WASHINGTON AVENUE, SUITE 210
ST. PAUL, MN 55108
JULIE SHERK
(612) 721-0411

SURVEYOR:
WIDETH SMITH HOLDING
1000 W. WASHINGTON STREET
PO BOX 1028
ALEXANDRIA, MN 56008
(509-335-3625)



PROJECT INFORMATION	
LOCATION #:	276206
SITE NAME:	JORDAN TRAIL
P.I.N. #:	32004927-000-003
SITE ADDRESS:	801 S 107TH ST WEST DES MOINES, IA 52265
LATITUDE:	N 41° 33' 26.22" (FROM 1-A)
LONGITUDE:	W 83° 43' 58.94" (FROM 1-A)
GROUND ELEVATION:	828.5 (NAV/088) (FROM 1-A)
ZONING:	POLK COUNTY
JURISDICTION:	
TELCO:	CENTURYLINK
COMPANY:	515-287-7885
POWER:	MIDAMERICAN ENERGY
COMPANY:	515-252-8472
CONSTRUCTION TYPE:	RAW LAND
STRUCTURE TYPE:	125' HIGH STEALTH MONOPOLE TOWER
OVERALL STRUCTURE HEIGHT:	135' A.G.L.
WI/APPLURANANCES:	
VZW ANTENNA CL HEIGHT:	115' & 125' A.G.L.
APPLICANT:	VERIZON WIRELESS 10801 BUSH LAKE ROAD BLOOMINGTON, MN 55438
PROPERTY OWNER:	JIM BELISLE (PROPERTY/ACCESS CONTACT)
CONSTRUCTION MANAGER:	GREG LINDER (651) 255-8669
REAL ESTATE MANAGER:	CHRIS TOSTER COUGHLIN (612) 220-6470 (CONTACT PERSON)

DRIVING DIRECTIONS

FROM VZW DES MOINES SWITCH:
HEAD WEST ON E ARMY POST RD, TURN RIGHT ONTO M.28 N, TURN LEFT ONTO 19TH ST. DESTINATION WILL BE ON THE RIGHT.

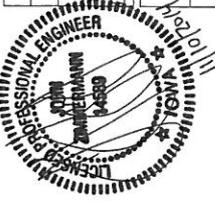


LAND SPACE DESCRIPTION:

THAT PART OF LOT 32, WEST GRAND INDUSTRIAL ACRES PLAT TWO, DESCRIBED AS FOLLOWS:
COMMENCING AT THE SOUTHWEST CORNER OF SAID LOT 32; THENCE NORTH 17 DEGREES 58 MINUTES 32 SECONDS WEST, A DISTANCE OF 164.80 FEET TO THE POINT OF BEGINNING OF THE LAND SPACE TO BE EAST ENCLOSED; THENCE SOUTH 17 DEGREES 03 MINUTES 29 SECONDS WEST, A DISTANCE OF 50.00 FEET; THENCE NORTH 17 DEGREES 03 MINUTES 29 SECONDS WEST, A DISTANCE OF 25.00 FEET; THENCE NORTH 72 DEGREES 35 MINUTES 31 SECONDS EAST, A DISTANCE OF 50.00 FEET TO THE POINT OF BEGINNING.

SPECIAL NOTES

HANDICAPPED REQUIREMENTS:
FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION HANDICAPPED ACCESS REQUIREMENTS NOT REQUIRED
PLUMBING REQUIREMENTS:
FACILITY HAS NO PLUMBING OR REFRIGERANTS
FAA AND FCC REQUIREMENTS:
THIS FACILITY SHALL MEET OR EXCEED ALL FAA AND FCC REQUIREMENTS
CONSTRUCTION REQUIREMENTS:
FACILITY TO BE CONSTRUCTED IN ACCORDANCE WITH ALL CONSTRUCTION INSTALLATION STANDARDS & ALL APPLICABLE CODES AND ORDINANCES.



LESSOR/LICENSOR APPROVAL	
SIGNATURE	PRINTED NAME
DATE	DATE

LESSOR/LICENSOR: PLEASE CHECK THE APPROPRIATE BOX BELOW
 NO CHANGES. CHANGES NEEDED. SEE COMMENTS ON PLANS

VERIZON WIRELESS
DEPARTMENT APPROVALS

RF ENGINEER	INITIALS	DATE
	INKB	3/26/14
OPERATIONS MANAGER	JS	3/27/14
CONSTRUCTION ENGINEER	BB	3/31/14
CONSTRUCTION MANAGER		
REAL ESTATE MANAGER	CC	4/3/14



NO	DATE	DESCRIPTION
1	01/22/14	ISSUED FOR REVIEW
2	02/11/14	REVISED ASBESTH
3	02/11/14	REVISED ASBESTH
4	02/11/14	REVISED ASBESTH
5	02/11/14	ISSUED FOR REVIEW
6	02/11/14	ISSUED FOR REVIEW
7	02/11/14	ISSUED FOR REVIEW
8	02/11/14	ISSUED FOR REVIEW
9	02/11/14	ISSUED FOR REVIEW
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48	02/11/14	ISSUED FOR REVIEW
49	02/11/14	ISSUED FOR REVIEW
50	02/11/14	ISSUED FOR REVIEW

LOCATION #276206
DES JORDAN TRAIL
801 S 107TH ST
WEST DES MOINES, IA 52265

DOWN BY:	ML
CHECKED BY:	DM
DATE:	01/22/14
PROJECT #:	72015

SHEET TITLE	TITLE SHEET
SHEET NUMBER	

ATTACHMENT D

THIS DRAWING IS UNMANNED AND IS THE SOLE PROPERTY OF TERRA CONSULTING GROUP, LTD. IT IS PROVIDED FOR INFORMATION ONLY AND IS NOT TO BE USED FOR CONSTRUCTION WITHOUT THE WRITTEN PERMISSION OF TERRA CONSULTING GROUP, LTD. IT IS PROHIBITED ALL RIGHTS RESERVED. © 2011

FULL SCALE PRINT IS ON 24"x36" MEDIA

GENERATOR TYPE = DIESEL

ATTACHMENTS

SURVEY

SHEET	DESCRIPTION	REVISION
T-1	TITLE SHEET	B,C,D
LP-1	LOCATION PLAN	B,C,D
C-1	ENLARGED SITE PLAN	B,C
C-2	SITE GRADING PLAN (SHEET 1 OF 1)	B,C
C-3	EQUIPMENT ENCLOSURE FOUNDATION PLAN	B
C-4	FENCE DETAILS	B
C-5	GENERAL CIVIL NOTES	B
ANT-1	SITE ELEVATION	B
ANT-2	ANTENNA INFORMATION	B
ANT-3	ANTENNA MOUNTING DETAILS	B
B-1	EQUIPMENT ENCLOSURE PLAN AND SECTION	B
B-2	EQUIPMENT ENCLOSURE ELEVATIONS	B
E-1	UTILITY ROUTING PLAN	B
E-2	ELECTRICAL DETAILS	B
G-0	GROUND LEGEND AND NOTES	B
G-1	SITE GRADING PLAN	B
G-2	GROUNDING DETAILS	B
G-3	GROUNDING DETAILS	B
G-4	ELECTRICAL AND GROUNDING DETAILS	B
G-5	GROUNDING DETAILS	B
L-1	LANDSCAPE PLAN	B,C



10801 Bush Lake Rd
Bloomington, MN 55438



500 Base Highway
Park Ridge, IL 60068
Fax: 847/698-6401

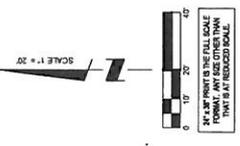
NO	DATE	DESCRIPTION
NO	BY	REVISIONS
1	ML	ISSUED FOR REVIEW
2	ML	REVISED EASEMENT
3	ML	REVISED EASEMENT AREA
4	ML	ISSUED FOR REVIEW
5	ML	REVISED FOR COMMENTS
6	ML	REVISED FOR COMMENTS
7	ML	REVISED FOR COMMENTS
8	ML	REVISED FOR COMMENTS
9	ML	REVISED FOR COMMENTS
10	ML	REVISED FOR COMMENTS

LOCATION #276206
DES
JORDAN TRAIL

801 S 19TH ST
WEST DES MOINES, IA 50265

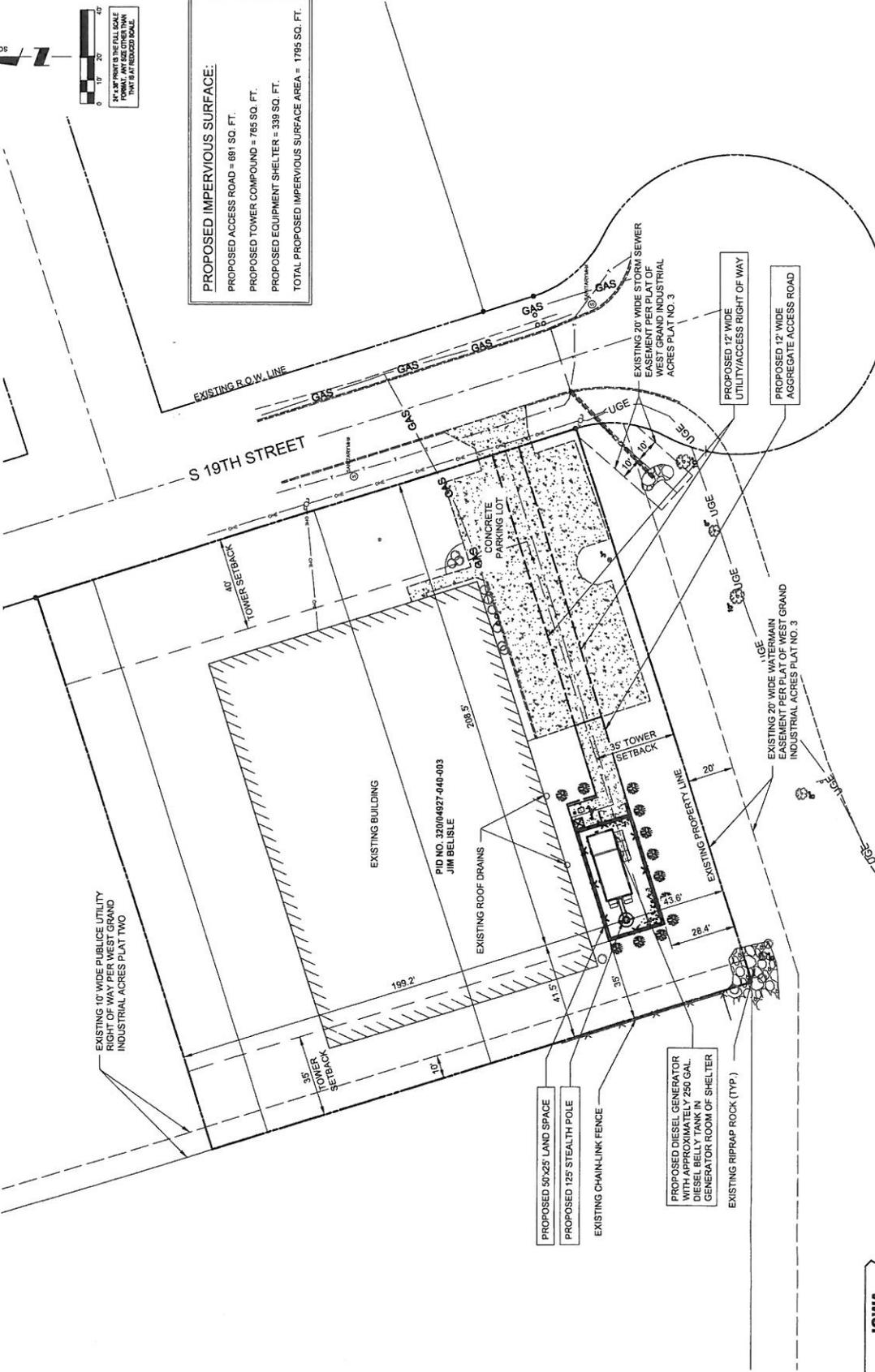
DRAWN BY:	ML
CHECKED BY:	DM
DATE:	01/27/14
PROJECT #:	72415

SHEET TITLE
LOCATION PLAN
SHEET NUMBER
LP-1



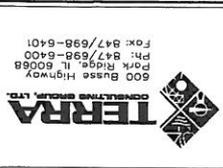
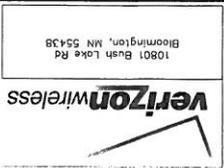
PROPOSED IMPERVIOUS SURFACE:
 PROPOSED ACCESS ROAD = 891 SQ. FT.
 PROPOSED TOWER COMPOUND = 785 SQ. FT.
 PROPOSED EQUIPMENT SHELTER = 339 SQ. FT.
 TOTAL PROPOSED IMPERVIOUS SURFACE AREA = 1785 SQ. FT.

Engineering
Architecture
Surveying
Environmental



1 LOCATION PLAN
SCALE: 1" = 20'





NO.	DATE	ISSUED FOR REVIEW	DESIGNER
NO	9/22/14	ML	ML
1	10/21/14	ML	ML
2	11/17/14	ML	ML
3	12/11/14	ML	ML
4	1/15/15	ML	ML
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199	4/15/31	ML	ML
200	5/15/31	ML	ML

10801 Bush Lake Rd
Bloomington, MN 55439

800 847-6988
Fax: 847/698-6401

600
P.O. Box 847
Bloomington, IL 61702-0847

801 S. 19TH ST
WEST DES MOINES, IA 50265

PROJECT # 12015

CHECKED BY: DM

DATE: 01/22/14

DOWN BY: HL

SHEET TITLE
ENLARGED SITE PLAN

SHEET NUMBER
C-1

LOCATION #276206

DES
JORDAN TRAIL

REVISIONS

NO. DATE ISSUED FOR REVIEW DESIGNED BY

1 10/22/14 ML ML

2 11/17/14 ML ML

3 12/11/14 ML ML

4 1/15/15 ML ML

5 2/10/15 ML ML

6 3/10/15 ML ML

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10801 Bush Lake Rd
Bloomington, MN 55438

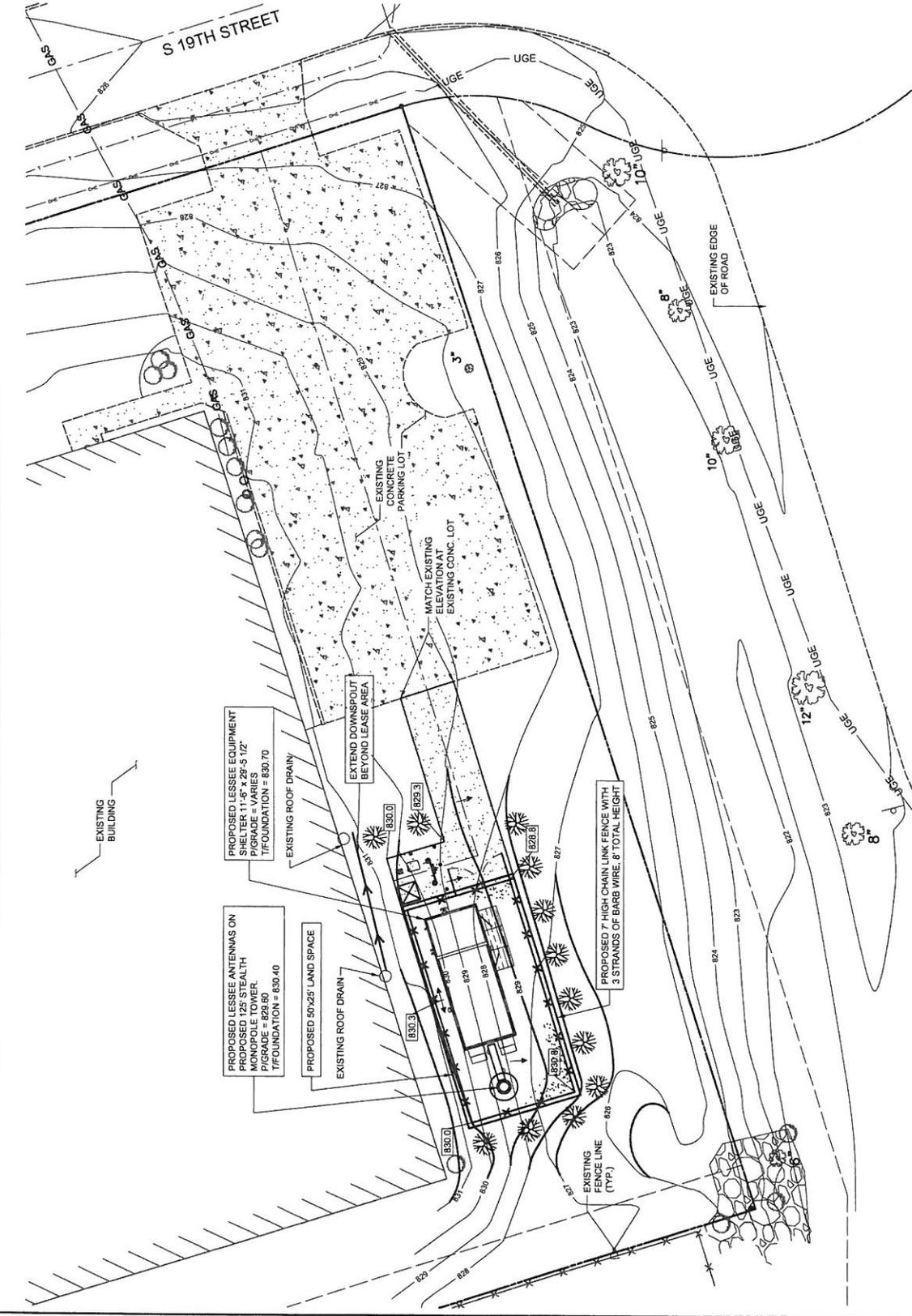
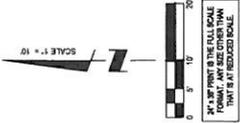
600 Basse Highway
P.O. Box 1165
West Des Moines, IA 50266
Ph: 847/698-6400
Fax: 847/698-6401

NO	DATE	BY	DESCRIPTION
1	01/22/14	ML	ISSUED FOR REVIEW
2	02/27/14	DMS	REVISED BASEMENT
3	02/27/14	ML	REVISED LEASE AREA
4	01/17/14	JAS	ISSUED FOR REVIEW
5	01/17/14	JAS	REVISED PER COMMENTS
6	10/28/14	JAS	REVISED PER COMMENTS

LOCATION #276206
DES
JORDAN TRAIL
801 S. 137TH ST
WEST DES MOINES, IA 50265

DRAWN BY:	ML
CHECKED BY:	DM
DATE:	01/22/14
PROJECT #:	72415

SHEET TITLE
SITE GRADING PLAN
SHEET NUMBER
C-2



IOWA ONE CALL
800/292-4389
TOLL-FREE
CALL - BEFORE - YOU - DIG

NOTE:
OPERATOR TO GRADE SITE SUCH THAT POSITIVE DRAINING PATTERNS ARE MAINTAINED THROUGH PROPOSED COMPOUND & ACCESS DRIVE

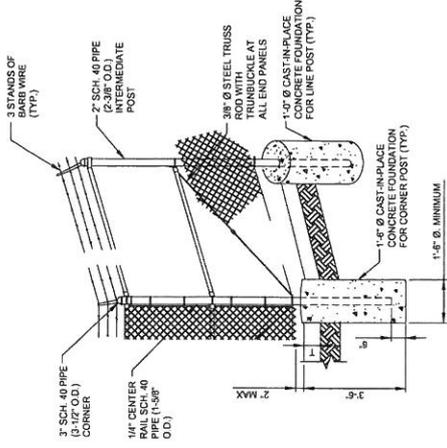


NO	DATE	DESCRIPTION
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2	02/11/14	REVISED FOR REVIEW
3	01/14/14	ISSUED FOR REVIEW
4	01/14/14	REVISED FOR REVIEW
5	02/11/14	REVISED FOR REVIEW
6	01/22/14	ISSUED FOR REVIEW
7	01/14/14	ISSUED FOR REVIEW
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9	01/22/14	REVISED FOR REVIEW
10	01/22/14	REVISED FOR REVIEW

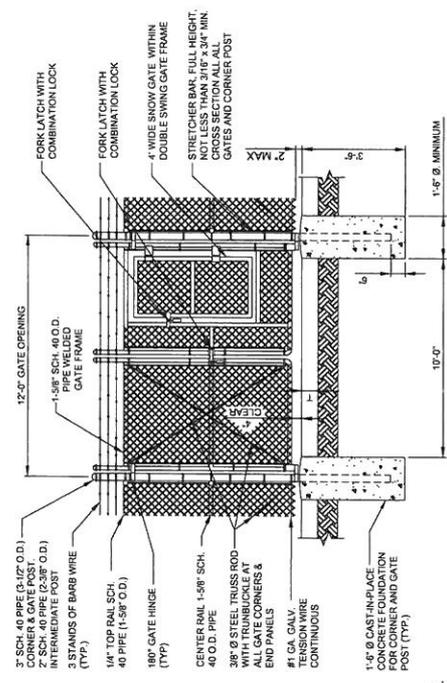
LOCATION #276206
DES JORDAN TRAIL
801 S 197TH ST
WEST DES MOINES, IA 50265

PROPERTY	MINIMUM VALUE (A)	TEST METHOD
GRAB STRENGTH	180 LBS.	ASTM D-4832-91
PUNCTURE STRENGTH	75 LBS.	ASTM D-4833-88
BURST STRENGTH	200 LBS.	ASTM D-2706
TRAPEZOIDAL TEAR	50 LBS.	ASTM D-4571-87

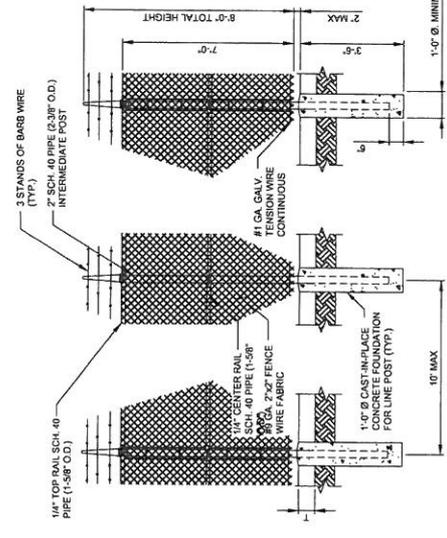
C-4
SHEET NUMBER
DRAWN BY: ML
CHECKED BY: DM
DATE: 01/22/14
PROJECT #: 72-315
SHEET TITLE: FENCE DETAILS



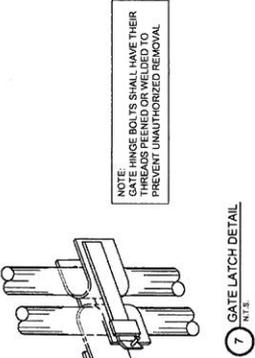
1 FENCE POST DETAIL
N.T.S.



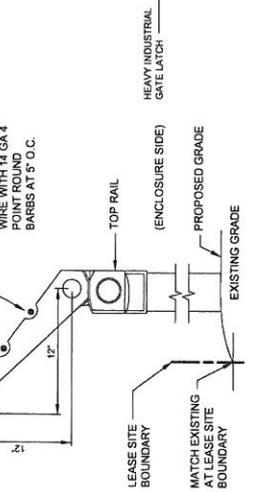
2 12'-0" DOUBLE SWING GATE
N.T.S.



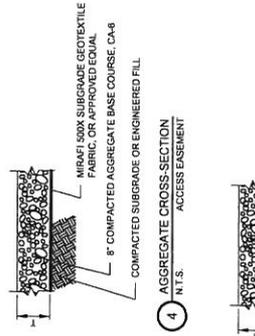
3 CORNER POST DETAIL
N.T.S.



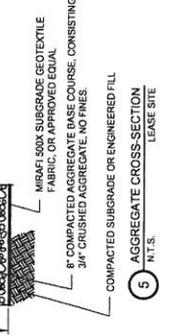
4 GATE LATCH DETAIL
N.T.S.



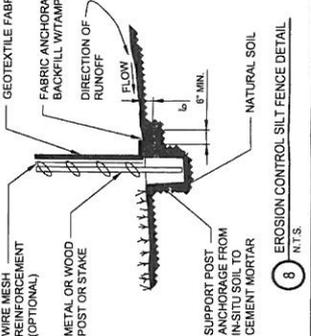
5 BARBED WIRE DETAIL
N.T.S.



6 AGGREGATE CROSS-SECTION ACCESS EASEMENT
N.T.S.



7 AGGREGATE CROSS-SECTION LEASE SITE
N.T.S.



8 EROSION CONTROL SILT FENCE DETAIL
N.T.S.

FENCING NOTES:
1. ALL STEEL MATERIAL SHALL BE HOT-DIPPED GALVANIZED AND CONFORM TO FEDERAL SPECIFICATION RR-F-691.
2. GATE HINGE BOLTS SHALL HAVE THEIR THREADS PEENED OR WELDED TO PREVENT UNAUTHORIZED REMOVAL.
3. THE FENCE SHALL BE GROUNDING AS SHOWN IN ELECTRICAL DETAILS.
4. FENCING AND RELATED ASSEMBLIES SHALL BE GALVANIZED ZINC FINISH (ASTM A653) OR GALVANNEAL (ASTM A651).
5. ALL CONCRETE FOOTINGS SHALL BE 6.1 BAG MK 3000 PSI CONCRETE.
6. ALL CORNER POST SHALL HAVE BARB WIRE/ARMS LEANING OUT.
7. ALL GATE FABRIC, POSTS AND HARDWARE SHALL HAVE A GALVANIZED FINISH CONFORMING TO ASTM A153 OR 120123.

GENERAL NOTES
1) REFER TO THE PROJECT MANUAL FOR ADDITIONAL INFORMATION AND REQUIREMENTS RELATED TO CONSTRUCTION.
2) THE OWNER HAS CAUSED A GEOTECHNICAL EXPLORATION TO BE PERFORMED AT THE SITE.
3) THE CONTRACTOR SHALL NOTIFY THE CLIENT'S GEOTECHNICAL ENGINEER FOR CONSIDERATION OF HAVING A FIELD REPRESENTATIVE ON SITE FOR TESTING AND INSPECTION.
COPIES OF THE REPORT ARE ISSUED TO THE CONTRACTOR FOR CONVENIENCE ONLY. THE REPORT IS NOT A PART OF THE CONTRACT DOCUMENTS. NEITHER THE CONTRACTOR NOR THE OWNER SHALL BE RESPONSIBLE FOR THE ACCURACY OR VALIDITY OF THE DATA CONTAINED THEREIN, NOR DO THEY ASSUME ANY RESPONSIBILITY FOR THE CONTRACTORS USE OR INTERPRETATION OF THE DATA CONTAINED THEREIN.

NOTES:
THE FABRIC SHOULD BE PLACED IN ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATIONS. INTERSECTIONS OF SHEETS MUST BE SEWN OR SUFFICIENTLY OVERLAPPED TO PREVENT WEAVING. FABRIC SHOULD BE UNFOLDED TO REMOVE FOLDS. CARE MUST BE EXERCISED TO PREVENT PHYSICAL DAMAGE OF THE GEOTEXTILE PRIOR TO, DURING AND AFTER INSTALLATION. UTILITIES SHOULD BE INSTALLED BEFORE PLACING THE FABRIC.



GENERAL NOTES

GENERAL REQUIREMENTS:

1. ALL WORK SHALL CONFORM TO THE REQUIREMENTS OF THE LATEST EDITIONS OF THE FOLLOWING CODES/SPECIFICATIONS.
 - A. SECTE CONTRACT DOCUMENTS AND THE PROJECT STANDARDS
 - B. ALL APPLICABLE LOCAL, STATE AND FEDERAL CODES AND REGULATIONS
 - C. UNIFORM BUILDING CODE (UBC) / BUILDING OFFICIALS & CODE ADMINISTRATORS (BOCA) AS APPLICABLE
 - D. AMERICAN CONCRETE INSTITUTE (ACI)
 - E. AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)
 - F. ELECTRONIC INDUSTRIES ASSOCIATION STANDARDS (EIA / ITA-22-E)
2. THE FACILITY IS AN UNOCCUPIED SPECIALIZED MOBILE RADIO FACILITY. PLANS ARE NOT TO BE SCALED AND ARE INTENDED TO BE A WORK SHALL INCLUDE FINISHING MATERIALS, EQUIPMENT, AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.
3. THE SUPERVISION OF THE BIDS, THE CONTRACTOR SHALL VISIT THE JOB SITE AND BECOME FAMILIAR WITH THE FIELD CONDITIONS. ANY DISCREPANCIES ARE TO BE BROUGHT TO THE ATTENTION OF THE CONTRACTOR'S REPRESENTATIVE.
5. THE CONTRACTOR SHALL RECEIVE IN WRITING, AUTHORIZATION TO IDENTIFY BY THE CONTRACT DOCUMENTS.
6. THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY OTHERWISE NOTED.
7. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK USING THE CONTRACT DOCUMENTS. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES AND FOR COORDINATING ALL PORTIONS OF THE WORK INCLUDING THE COORDINATION WITH THE CONSULTANT AND COORDINATION WITH THE LANDLORD'S AUTHORIZED REPRESENTATIVE.
8. THE CONTRACTOR SHALL ACQUIRE SURVEYOR SERVICES TO PROVIDE CONSTRUCTION STAKES SHALL IDENTIFY EASEMENT BOUNDARIES, LEASE BOUNDARIES, TOWER FOUNDATION, CENTER BOUNDARIES, SHELTER CORNERS, FENCE BOUNDARIES AND ALL OTHER BOUNDARIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COSTS ASSOCIATED WITH CONSTRUCTION STAKING.
9. THE CONTRACTOR SHALL MAKE NECESSARY PROVISIONS TO PROTECT EXISTING UTILITIES, AND SHALL BE RESPONSIBLE FOR THE PROTECTION AND UPON COMPLETION OF WORK, REPAIR ANY DAMAGE THAT OCCURRED DURING CONSTRUCTION.
10. KEEP THE CONSTRUCTION SITE CLEAN, HAZARD FREE AND DISPOSE OF ALL DIRT, DEBRIS, RUBBISH AND REMOVE EQUIPMENT NOT SPECIFIED AS PART OF THE PROJECT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CLEAN UP AND FREE FROM PAINT SPOTS, DUST, OR SMUDGES OF ANY NATURE.
11. CONTRACTOR SHALL PROVIDE A COPY OF SET OF AS BUILT DRAWINGS TO THE OWNER AFTER COMPLETION OF THE JOB.
12. MEANS AND METHODS OF CONSTRUCTION INCLUDES, BUT NOT LIMITED TO, THE DESIGN AND PLACEMENT OF FORMS AND SHORING ARE THE RESPONSIBILITY OF THE CONTRACTOR.
13. ALL EARTHWORK, GRADING AND PAVING SHALL BE PERFORMED IN ACCORDANCE WITH THE CURRENT STATE DEPARTMENT OF TRANSPORTATION STANDARDS FOR ROAD AND BRIDGE CONSTRUCTION.
14. ALL WORK PERFORMED BY THE CONTRACTOR SHALL BE GUARANTEED FOR A PERIOD OF 12 MONTHS FROM THE DATE OF FINAL ACCEPTANCE. THIS GUARANTEE SHALL INCLUDE ALL DEFECTS IN MATERIALS AND WORKMANSHIP.
15. ALL DIRT WILL BE DISPOSED OF OFFSITE BY THE CONTRACTOR.
16. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING ADEQUATE SIGNS, BARRICADES, FENCING, TRAFFIC CONTROL DEVICES AND MEASURES, NECESSARY TO PROTECT THE SAFETY OF THE SITE AT ALL TIMES.
17. THE CONTRACTOR, BY AGREEING TO PERFORM THE WORK, AGREES TO INDEMNIFY AND HOLD HARMLESS THE OWNER, THE ENGINEER, THE ARCHITECT AND ALL OTHERS FROM AND AGAINST ALL CLAIMS, DAMAGES, LOSSES AND SUITS AND CLAIMS ARISING OUT OF THE PERFORMANCE OF SAID WORK, AND FURTHER AGREES TO DEFEND OR OTHERWISE PAY ALL LEGAL FEES ARISING OUT OF THE DEFENSE OF SAID PARTIES.
18. EXISTING UTILITIES, IF ANY, ARE SHOWN AS A GUIDE ONLY. THE CONTRACTOR SHALL VERIFY THE LOCATION OF EXISTING UTILITIES PRIOR TO EXCAVATING ANYWHERE ON THE SITE.
19. ALL ADDENDA, IF ANY, MUST BE ACKNOWLEDGED WITH THE BID.

CONCRETE AND STEEL REINFORCEMENT

1. ALL CONCRETE SHALL BE NORMAL WEIGHT AND SHALL ACHIEVE COMPRESSIVE STRENGTH, f_c 4000 PSI AT 28 DAYS, UNLESS NOTED OTHERWISE. GENERAL SHALL CONFORM TO ASTM C1191 TYPE I.
2. ALL REINFORCING STEEL SHALL BE CONFORM WITH ASTM A632, TYPE 1. CONTRACTOR SHALL VERIFY THE TENSILE STRENGTH OF ALL REINFORCING STEEL PRIOR TO PLACEMENT OF CONCRETE.
3. MAXIMUM AGGREGATE SIZE SHALL NOT EXCEED 3/4".
4. SLUMP OF CONCRETE SHALL BE 2" TO 5".
5. ALL REINFORCING STEEL SHALL BE DEFORMED AND CONFORM TO THE REQUIREMENTS OF ASTM A632 GRADE 60.
6. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A 183.
7. NO ADMIXTURES SHALL BE USED WITHOUT THE PRIOR WRITTEN AUTHORIZATION OF THE ENGINEER.
8. ALL CONSTRUCTION AND EXPANSION JOINTS SHALL BE INSTALLED PER THE DRAWINGS.
9. ALL JOINTS OF CONCRETE WORK SHALL BE CLASSIFIED AS UNLESS NOTED OTHERWISE.
10. UNLESS NOTED OTHERWISE ALL REINFORCING STEEL SHALL BE LAPPED PER ACI CODE - 318.
11. ALL FORMWORK SHALL BE TIGHT, LEVEL, PLUMB AND SUFFICIENTLY SHORED TO RESIST CONSTRUCTION LOAD CONDITIONS.
12. CURING OF CONCRETE SHALL BE PER ACI 308.38, STANDARD PRACTICE FOR CURING CONCRETE.
13. PLACE CONCRETE IN ACCORDANCE WITH ACI 304.3B.
14. HOT WEATHER CONCRETE SHALL BE PER ACI 308.3B.
15. COLD WEATHER CONCRETE SHALL BE PER ACI 308.3B.
16. WELDING OF REINFORCING STEEL ARE PROHIBITED.
18. PRIOR TO THE PLACEMENT OF THE CONCRETE, THE CONTRACTOR SHALL VERIFY THE CAPACITY OF THE FORMWORK TO BE USED TO THE OWNERS REPRESENTATIVE AND THE TESTING AGENCY.
17. PROVIDE TEST CYLINDERS AS FOLLOWS:
 - A. 1 CYLINDER AT 7 DAYS
 - B. 1 CYLINDER AT 28 DAYS
 - C. 1 CYLINDER AT 56 DAYS
 - D. 1 CYLINDER AT 84 DAYS
18. ALL REBAR SERVICES SHALL BE CLASS C, NO WELDING WILL BE ALLOWED.

EQUIPMENT ENCLOSURE FOUNDATION

1. REFER TO CIVIL DRAWINGS FOR ORIENTATION OF THE FOUNDATIONS.
2. FOOTINGS SHALL BEAR ON VIRGIN SOIL OR COMPACTED FILL MATERIAL CAPABLE OF SUPPORTING A MINIMUM SOIL BEARING PRESSURE AS DETERMINED BY THE TESTING AGENCY ($q_u = 2,000$ PSF).
3. SUBGRADE PREPARATION:
 - A. REMOVE ALL SOILS CONTAINING TOPSOIL, ORGANIC MATERIALS, AND/OR UNDESIRABLE DEBRIS.
 - B. EXCAVATE TO A MINIMUM DEPTH OF ENCLOSURE FOUNDATION. SKIN SHALL BE PROTECTED WITH A MINIMUM 18" OF GRANULAR FILL. SKIN SHALL BE PROTECTED WITH A MINIMUM 18" OF GRANULAR FILL. SKIN SHALL BE PROTECTED WITH A MINIMUM 18" OF GRANULAR FILL. SKIN SHALL BE PROTECTED WITH A MINIMUM 18" OF GRANULAR FILL.
 - C. BACKFILL AND COMPACT THE AREA WITHIN THE BUILDING FOUNDATION, AND UNDER THE SLAB OR BETWEEN RESULTANT SUBGRADE AND FOUNDATION WALL WITH GRANULAR MATERIAL.
4. FOUNDATION WALLS SHALL BE BACKFILLED EVENLY ON EACH SIDE OF THE FOUNDATION. THE BACKFILL SHALL BE GRANULAR MATERIAL. BACKFILL SHALL BE GRANULAR MATERIAL. BACKFILL SHALL BE GRANULAR MATERIAL. BACKFILL SHALL BE GRANULAR MATERIAL.
5. REFER TO SOILS REPORT FOR MIN. BEARING CAPACITY BELOW FOOTING.

EQUIPMENT ENCLOSURE BUILDING

1. THE EQUIPMENT ENCLOSURE BUILDING BEING USED FROM AN EXISTING LOCATION. GENERAL CONTRACTOR IS TO PICK UP, DELIVER AND INSTALL SHELTER.
2. GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR PLACING SHELTER ON FOUNDATIONS.
3. GENERAL CONTRACTOR SHALL SECURE SHELTER TO FOUNDATION WITH 4" STEEL BRACKETS SUPPLIED BY OWNER. BRACKETS SHALL BE WELDED TO THE FOUNDATION. GENERAL CONTRACTOR SHALL REMOVE FROM THE SITE ALL STEEL BRACKETS ORIGINALLY SECURED TO THE SHELTER FOR OFF-LOADING PURPOSES.
4. GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR PICKING UP AND DELIVERING TO THE SITE ALL MATERIALS AND EQUIPMENT. ALL MATERIALS SHALL INCLUDE VERIFYING LOCAL ROAD AND TRAIL CONDITIONS PRIOR TO SUBMISSION OF BID. ANY ADDITIONAL SITE CONDITIONS PRIOR TO SUBMISSION OF BID, ANY ADDITIONAL ADDITIONAL ROCK, CRANE WORK, GRADING, ETC SHALL BE INCLUDED IN THE BID. CHANGE ORDERS REQUESTED AFTER START OF CONSTRUCTION FOR THIS SHALL BE AT THE CONTRACTOR'S EXPENSE.

EARTHWORK, GRADING, AND PAVING

1. ALL PROPOSED PAVEMENT AREAS SHALL BE STORED OF ALL TOPSOIL, AND UNSUITABLE MATERIAL AND EXCAVATED OR FILLED TO WITHIN 0.10 FEET OF DESIGN SUBGRADE.
2. THE SUBGRADE SHALL BE FREE OF ALL UNSUITABLE MATERIAL AND SHALL BE COMPACTED TO A MIN. 95 PERCENT OF UNIFIED PROCTOR DENSITY.
3. ALL EXCAVATIONS SHALL BE PROTECTED WITH SHORING AND BRACING. IN DETERMINING ALL QUANTITIES AND TO BECOME FAMILIAR WITH THE SITE AND SOIL CONDITIONS.
4. POSITIVE DRAINAGE AT THE CONCLUSION OF EACH WORKING DAY.
5. THE PAVING CONTRACTOR IS RESPONSIBLE FOR THE FINAL SUBGRADE PREPARATION, THE PAVEMENT, BASE, BINDER, AND SURFACE, AND ALL OTHER RELATED WORK ASSOCIATED WITH THE PAVING CONTRACTOR'S SCOPE OF WORK.
6. UPON COMPLETION OF THE PAVING, THE CONTRACTOR WILL ENSURE THAT POSITIVE DRAINAGE EXISTS ADJACENT TO ALL CONSTRUCTED IMPROVEMENTS.

SOIL EROSION AND SEDIMENT CONTROL

1. REASONABLE CARE MUST BE TAKEN TO MINIMIZE SOIL EROSION. REFER TO THE SPECIFICATIONS AND STANDARDS FOR URBAN SOIL EROSION AND SEDIMENT CONTROL, PREPARED BY THE U.S. SOIL AND WATER CONSERVATION SERVICE.
2. ALL INLETS, STRUCTURES, PIPES, SWALES, AND ROADS SHALL BE KEPT CLEAN AND FREE OF DIRT AND SILT.
3. STOCKPILES SHALL HAVE A BERM OF 12" MINIMUM HEIGHT AND SHALL BE COVERED WITH VEGETATION TO CONTROL BOTH WATER AND WIND EROSION.
4. STRAW BALES SHALL BE PLACED AROUND ALL INLETS AND STRUCTURES TO PREVENT SILT FROM RECEIVING DRAINAGE DURING THE COURSE OF CONSTRUCTION.
5. MAINTAIN SOIL EROSION CONTROL DEVICES THROUGH THE DURATION OF THIS PROJECT.
6. REFER TO SPECIFICATIONS FOR EROSION CONTROL DEVICES WITH 900 AND TOPSOIL AT THE CONCLUSION OF THE PROJECT.
7. ALL ADJACENT ROADWAYS SHALL BE KEPT CLEAN AT ALL TIMES.
8. ADDITIONAL SOIL EROSION CONTROL MEASURES SHALL BE INSTALLED IF DEEMED NECESSARY BY THE ENGINEERING INSPECTOR DURING THE COURSE OF CONSTRUCTION.

verizon
wireless

10801 Bush Lake Rd
Bloomington, MN 55438

TERRA
CONSULTING ENGINEERS, LTD.

600 Base Highway
St. Paul, MN 55108
Tel: 647/698-6400
Fax: 647/698-6401

NO.	DESCRIPTION	DATE	BY
1	ISSUED FOR REVIEW	01/21/14	MS
2	REVISED EASEMENT	02/24/14	MS
3	REVISED EASEMENT	02/24/14	MS
4	REVISED EASEMENT	02/24/14	MS
5	REVISED PER COMMENTS	07/14	JAS
6	REVISED PER COMMENTS	07/14	JAS
7	REVISED PER COMMENTS	10/28/14	JAS

LOCATION #276206

DES

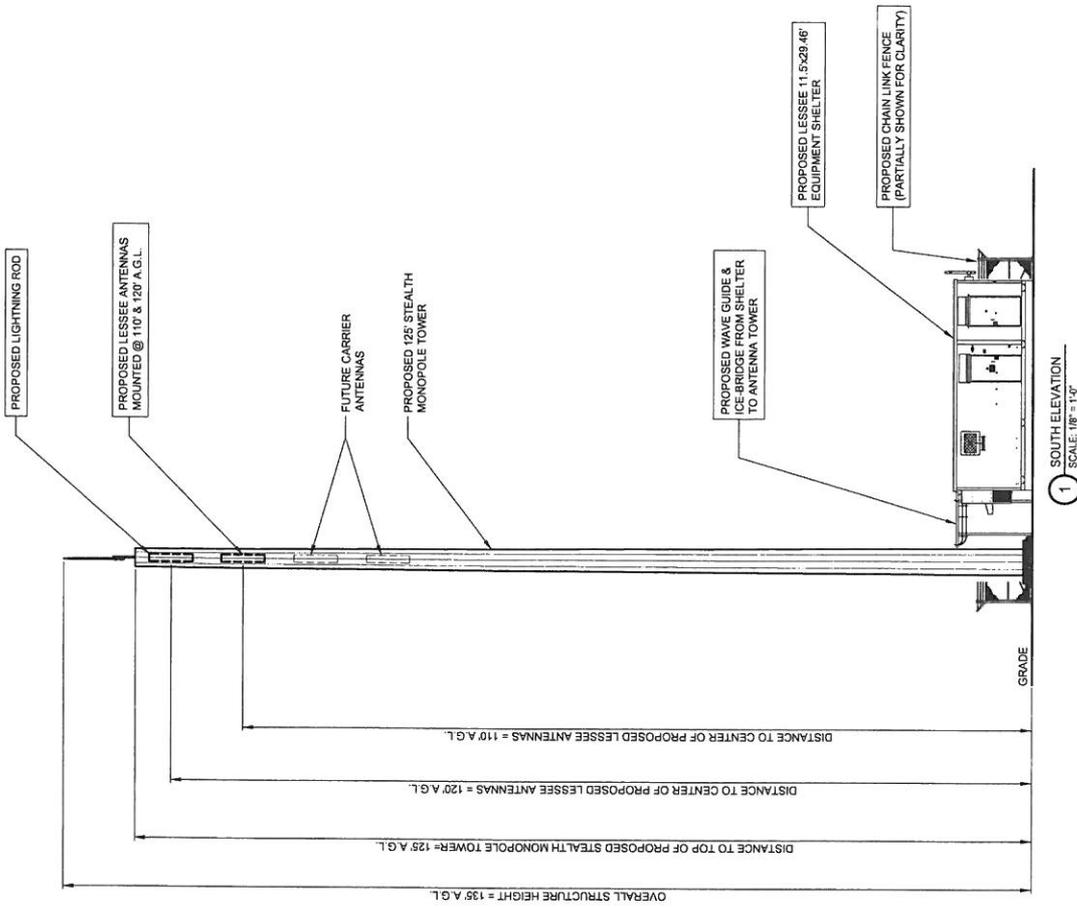
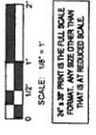
JORDAN TRAIL

801 S 107TH ST
WEST DES MOINES, IA 50265

DRAWN BY:	ML
CHECKED BY:	DM
DATE:	01/22/14
PROJECT #:	72-015

SHEET TITLE
GENERAL CIVIL NOTES

SHEET NUMBER
C-5



1 SOUTH ELEVATION
SCALE: 1/8" = 1'-0"

verizonwireless
10801 Bush Lake Rd
Bloomington, MN 55438

TERRA
COMMUNICATIONS GROUP, LTD.
800 Base Highway
P.O. Box 47/698-6400
Fax: 847/698-6401

NO.	DATE	BY	DESCRIPTION
A	01/22/14	ML	ISSUED FOR REVIEW
A-1	02/11/14	DM	REVISED FOR REVIEW
A-2	03/24/14	ML	REVISED LEASE AREA
B	4/14/14	JAS	ISSUED FOR REVIEW
C	5/21/14	JAS	REVISED PER COMMENTS
D	10/28/14	JAS	REVISED PER COMMENT

LOCATION #276206
DES
JORDAN TRAIL

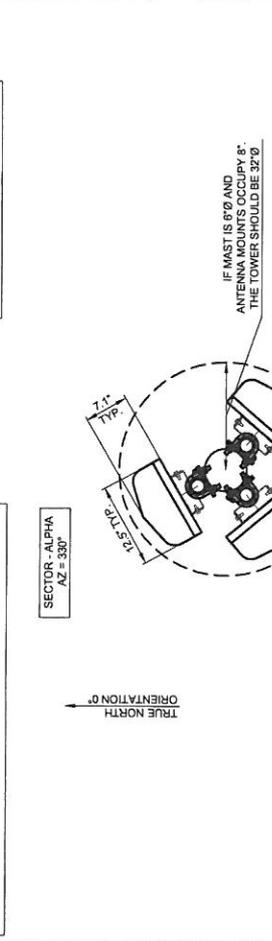
861 S 101TH ST
WEST DES MOINES, IA 50265

DRAWN BY: ML
CHECKED BY: DM
DATE: 01/22/14
PROJECT #: 72-015

SHEET TITLE
SITE ELEVATION
SHEET NUMBER
ANT-1

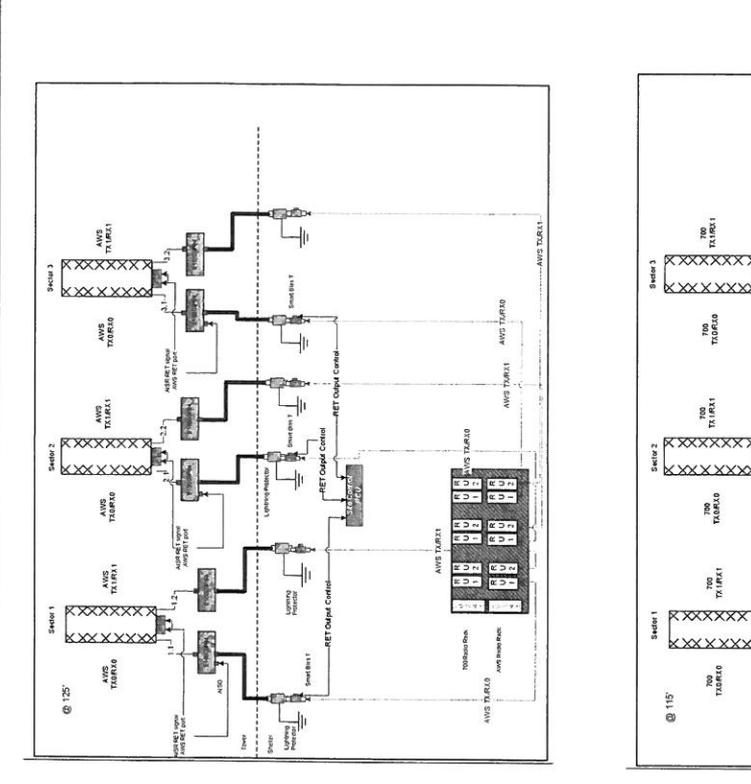
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99	1	AVS TOWER 99	AVS TOWER 99
100	1	AVS TOWER 100	AVS TOWER 100

PENDING TOWER DRAWINGS



1 ANTENNA SCHEDULE
 N.T.S.

2 ANTENNA CONFIGURATION
 N.T.S.



3 PLUMBING DIAGRAMS
 N.T.S.

verizonwireless

10801 Bush Lake Rd
 Bloomington, MN 55438

TERRA
 CONSULTING GROUP, LTD.

500 Base Highway
 P.O. Box 1054
 19400 Leola, PA 17345
 Fax: 847/698-6401

NO	DATE	DESCRIPTION
1	01/24/14	ISSUED FOR REVIEW
2	02/11/14	ISSUED FOR REVIEW
3	02/11/14	REVISED EASEMENT
4	02/11/14	REVISED EASEMENT
5	02/11/14	REVISED EASEMENT
6	02/11/14	REVISED EASEMENT
7	02/11/14	REVISED EASEMENT
8	02/11/14	REVISED EASEMENT
9	02/11/14	REVISED EASEMENT
10	02/11/14	REVISED EASEMENT

LOCATION #276206

DES
 JORDAN TRAIL

801 S 19TH ST
 WEST DES MOINES, IA 50265

PROJECT # 72415

DATE 01/22/14

CHECKED BY DM

DRAWN BY NL

ANTENNA INFORMATION

SHEET TITLE

SHEET NUMBER

ANT-2

NOTES:
 1. CONTRACTOR IS TO VERIFY THE ANTENNA LAYOUT WITH THE R.F. ENGINEER'S MOST RECENT R.F. DESIGN.
 2. CONTRACTOR IS TO SET ALL AZIMUTHS OFF OF TRUE NORTH

NO.	DATE	DESCRIPTION
NO.	01/22/14	ISSUED FOR REVIEW
A.1	02/17/14	DES.
A.2	02/27/14	ML
B.1	04/15/14	ISSUED FOR REVIEW
C	5/17/14	REDESIGNED PER COMMENTS
D	10/28/14	REVISED PER COMMENT

LOCATION #276206

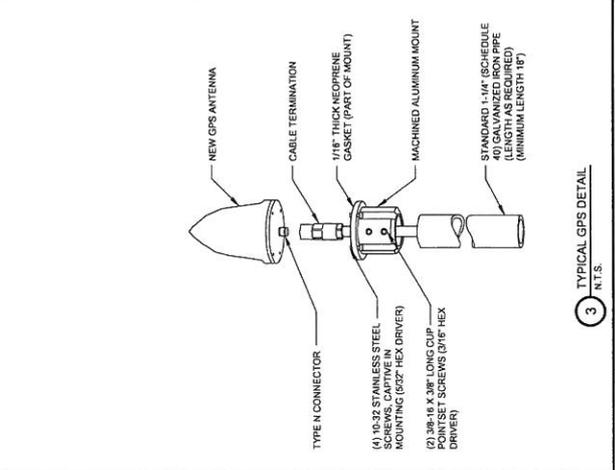
DES
JORDAN TRAIL

801 S. 19TH ST
WEST DES MOINES, IA 50265

DOWN BY:	ML
CHECKED BY:	DM
DATE:	01/22/14
PROJECT #:	72-015

ANT-3

SHEET NUMBER



3 TYPICAL GPS DETAIL
N.T.S.

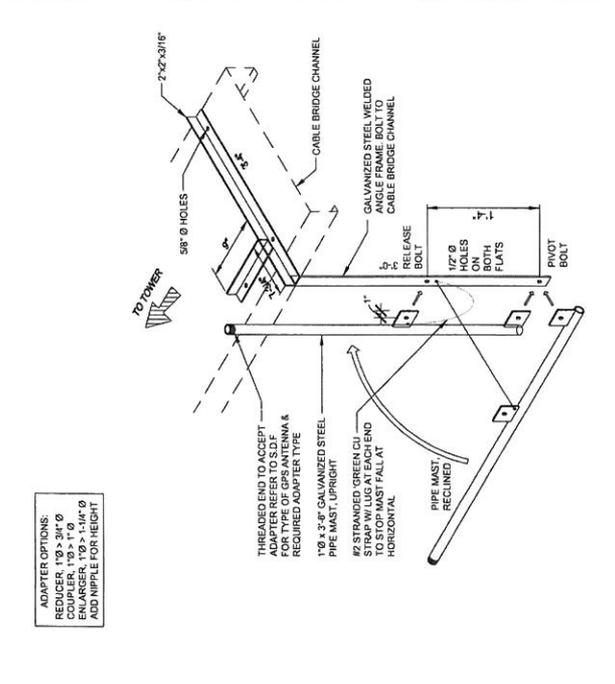
NOTES

- VERIFY EACH COAXIAL CABLE LENGTH, DIAMETER, ROUTING, AND ALL MOUNTING APPURTENANCES WITH OWNER PRIOR TO ORDER.
- THE MAXIMUM COAXIAL CABLE LENGTH HAS BEEN ESTIMATED AT 300 FEET WITH A CORRESPONDING CABLE DIAMETER OF 1.56". THIS CABLE LENGTH IS APPROXIMATE, AND IS NOT TO BE USED FOR CONSTRUCTION ACTUAL. ANTENNA CABLE LENGTHS MUST BE CHECKED FOR ESTIMATED MAXIMUM LENGTH AND MUST BE VERIFIED.
- TAG ALL MAIN CABLES (LABELED 1-12 TYPICAL. VERIFY WITH PM AT THREE (3) LOCATIONS):
 A. MAIN CABLES
 B. INSIDE EQUIPMENT SHELTER NEAR THE WAVEGUIDE ENTRY PORT
 C. OUTSIDE EQUIPMENT SHELTER NEAR THE WAVEGUIDE ENTRY PORT

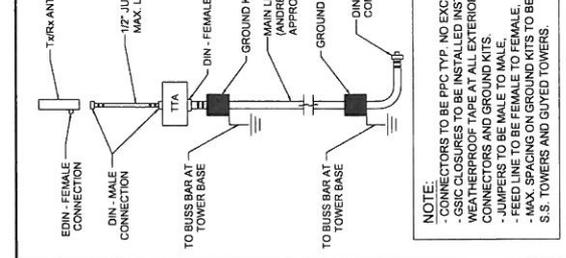
COAX LABELING/MARKING TECHNOLOGIES

ALPHA - BLUE	TELECOM (700) - PURPLE
BETA - BLUE	CDMA(850) - WHITE
GAMMA - GREEN	PCS(1900) - YELLOW
DELTA - ORANGE	AWS(2100) - BROWN
EPSILON - GRAY	PSI - PINK

- EACH COAX SHALL BE SUPPORTED WITH COLUMN GRIP (CHINESE FINGER GRIP) HUNG FROM A J-HOOK AT TOP OF TOWER, 10' ABOVE FOR LATTICE TOWER).
- EACH COAX SHALL BE GROUNDED AT (3) THREE LOCATIONS: TOWER PLATFORM, TOWER BASE AND BUILDING PORT ENTRY.
- COAXIAL CABLES TO BE SUPPORTED EVERY 3'-0" ON PLATFORM WITH STAINLESS STEEL HANGERS.
- JUMPERS TO BE SUPPORTED EVERY 18" WITH STAINLESS STEEL HANGERS.
- ATTENTION TO TOWER AND INTERNAL TO SHELTER CONTRACTOR SHALL ACQUIRE TAPE COLOR CODING INFORMATION FROM NETWORK OPERATIONS FIELD TECH DURING INSTALLATION.
- CONTRACTOR TO INSTALL T.M.A. NECESSARY BIAS-T HARDWARE AND PDU



2 GPS MOUNTING DETAIL
N.T.S.



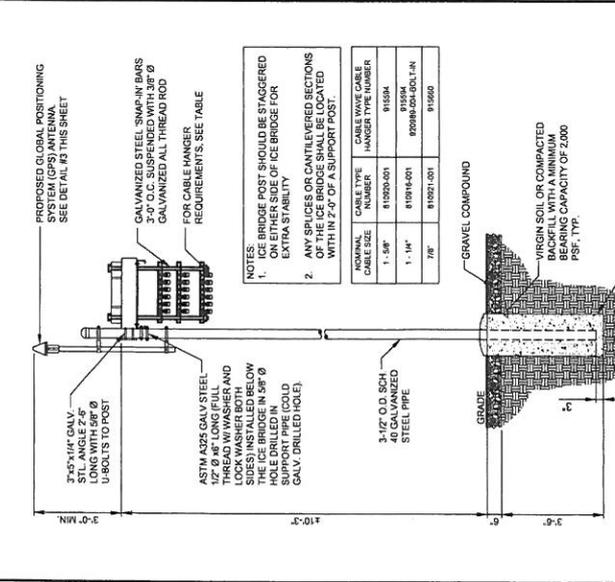
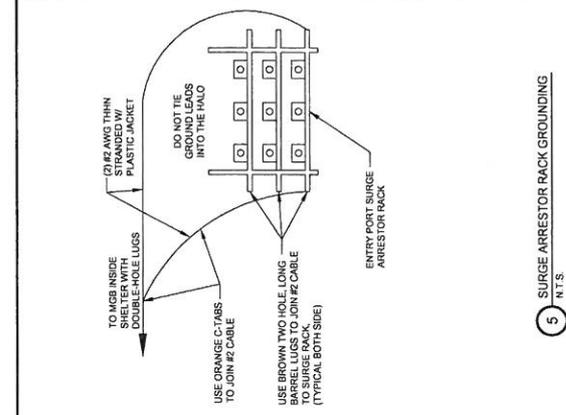
6 ANTENNA LINE SCHEMATIC
N.T.S.

ADAPTER OPTIONS:
 - 3" x 3" x 3" COUPLER, 1" x 1" x 1" ENLARGER, 1" x 3" x 1" x 1" x 1" ENLARGER, 1" x 3" x 1" x 1" x 1" ENLARGER, 1" x 3" x 1" x 1" x 1" ENLARGER
 ADD NIPPLE FOR HEIGHT

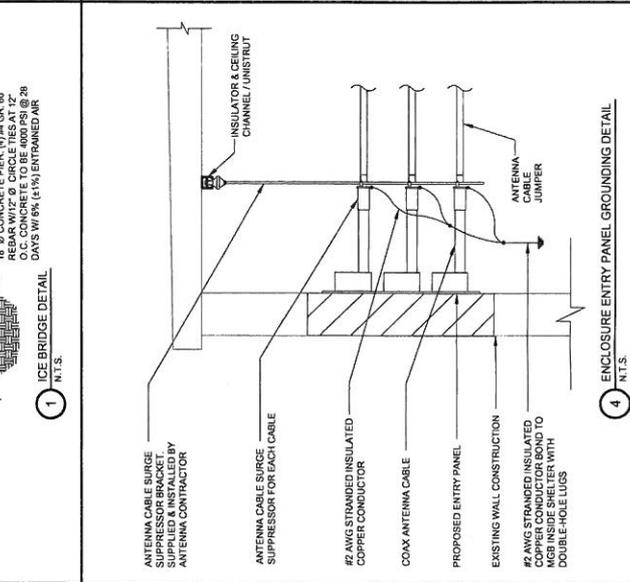
NOTES:

- THREADED END TO ACCEPT ADAPTER REFER TO S.D.F. FOR TYPE OF GPS ANTENNA & REQUIRED ADAPTER TYPE
- 1" x 3" x 3" GALVANIZED STEEL PIPE MAST, UPRIGHT
- #2 STRANGED GREEN CU STRAP W/ LUG AT EACH END TO STOP MAST FALL AT HORIZONTAL
- PIPE MAST RECLINED

5 SURGE ARRESTOR RACK GROUNDING
N.T.S.



1 ICE BRIDGE DETAIL
N.T.S.



4 ENCLOSURE ENTRY PANEL GROUNDING DETAIL
N.T.S.

NO.	DESCRIPTION	DATE	BY
1	ISSUED FOR REVIEW	01/22/14	ML
2	REVISED FOR REVIEW	02/11/14	CMS
3	ISSUED FOR REVIEW	02/11/14	ML
4	REVISED FOR REVIEW	03/27/14	ML
5	ISSUED FOR REVIEW	04/14/14	JAS
6	REVISED FOR REVIEW	05/14/14	JAS
7	ISSUED FOR REVIEW	05/14/14	JAS
8	REVISED FOR REVIEW	05/14/14	JAS
9	ISSUED FOR REVIEW	05/14/14	JAS
10	REVISED FOR REVIEW	10/28/14	JAS

LOCATION #276206

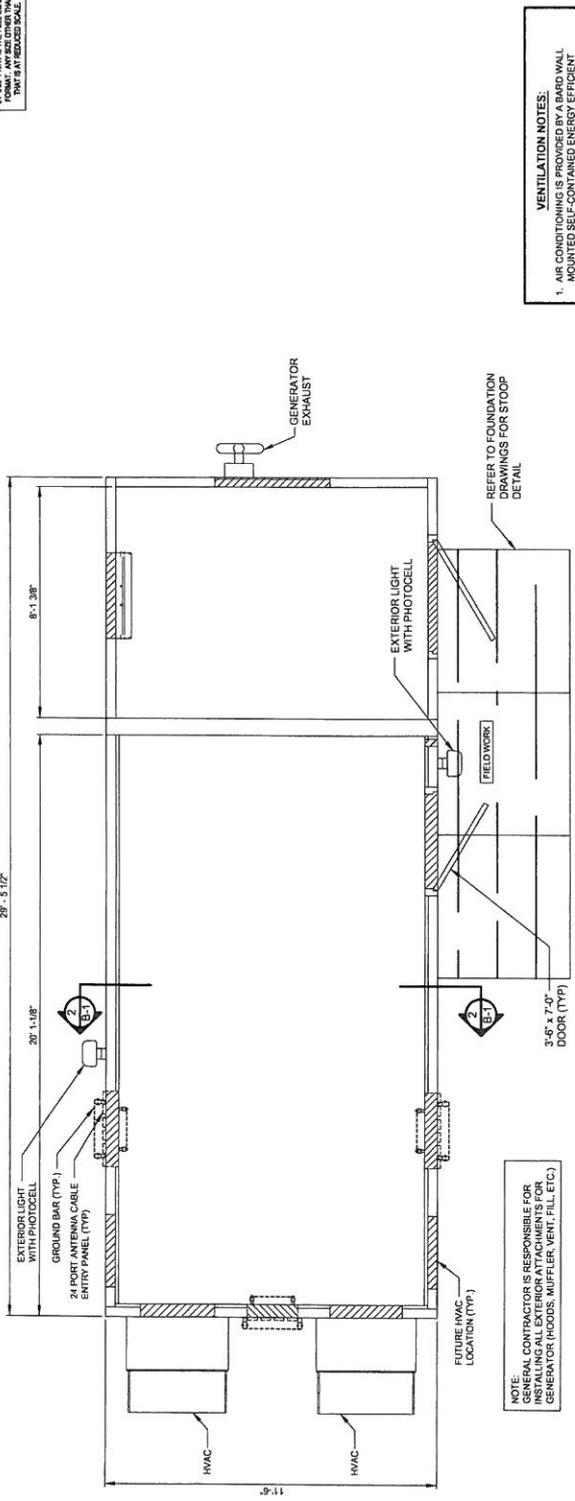
DES
JORDAN TRAIL

601 S 19TH ST
WEST DES MOINES, IA 50265

DRAWN BY:	ML
CHECKED BY:	DM
DATE:	01/22/14
PROJECT #:	72-015

SHEET TITLE
EQUIPMENT ENCLOSURE PLAN & SECTION

SHEET NUMBER
B-1



VENTILATION NOTES:

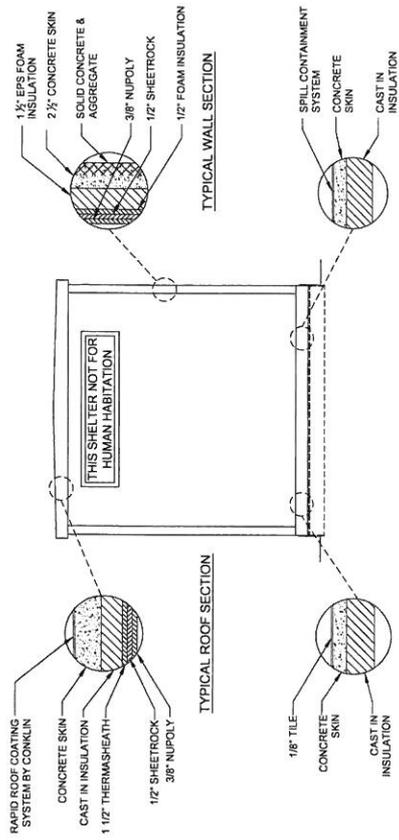
- AIR CONDITIONING IS PROVIDED BY A BARD WALL MOUNTED SELF-CONTAINED ENERGY EFFICIENT TON, 120240 VOLT, 30 AMP, SINGLE PHASE, 37,500 BTUH, COOLING CAPACITY, 10.20 SEER, 24\" DIA, 2600 CFM WITH FILTER.
- SEER RATING IS PROVIDED BY AUY, 18.84 SEER, 240 VOLT, SINGLE PHASE HEAT STRIP, WITHIN BARD UNIT, LISTED ABOVE.

ROOM PURPOSE	AREA	VENTILATION		REMARKS
		NATURAL	MECHANICAL	
WIRELESS TELEPHONE EQUIPMENT ENCLOSURE (NON-INHABITED)	342.5 S.F.	0 CFM	2600 CFM	0 CFM

NOTES:

- EQUIPMENT ENCLOSURE IS MANUFACTURED BY FIBERBOND. THIS SHEET IS PROVIDED AS GUIDE ONLY. REFER TO ACTUAL FIBERBOND DRAWINGS FOR FULL BUILDING PLANS.
- EPS BOARD INSULATION IS LISTED TO HAVE A FLAME SPREAD OF 25 OR LESS AND SMOKE DEVELOPED OF 450 OR LESS WITH A MAXIMUM THICKNESS OF 2 INCHES AT 1 PC DENSITY. POLYISOCYANURATE FOAM INSULATION HAS BEEN LISTED TO HAVE A FLAME SPREAD OF 25 AND A SMOKE PRODUCT OF 50%.
- INTERIOR PANELING IS LISTED TO HAVE A FLAME SPREAD OF 200 OR LESS.
- THIS ENCLOSURE IS CLASSIFIED AS USE GROUP S-2. TYPE 19 CONSTRUCTION; PER 2009 IBC AND IS IN COMPLIANCE WITH THE 2009 IBC, 2009 IBC, 2009 IFCC, 2009 NEC AND 2009 IECC.
- DESIGN CRITERIA
WIND LOAD = 150 MPH
ICE LOAD = 150 PSF
FLOOR LIVE LOAD = 150 PSF
ROOF DEAD LOAD = 45 PSF
SEISMIC EXPOSURE GROUP = III
E_s = 5000 PSI @ 28 DAYS (EQUIPMENT ENCLOSURE)
- ENCLOSURE AND ASSOCIATED EQUIPMENT IS PROVIDED BY OWNER UNDER CONTRACT. CONTRACTOR SHALL VERIFY EQUIPMENT INFORMATION INDICATED HEREIN IS PROVIDED FOR REFERENCE ONLY AND IS TAKEN FROM MANUFACTURERS AVAILABLE DATA. REFER TO CIVIL, STRUCTURAL AND ELECTRICAL DRAWINGS FOR WORK TO BE PERFORMED UNDER THIS CONTRACT.

1 FLOOR PLAN-EQUIPMENT ENCLOSURE
SCALE: 1/2" = 1'-0"



2 TRANSVERSE SECTION
N.T.S.

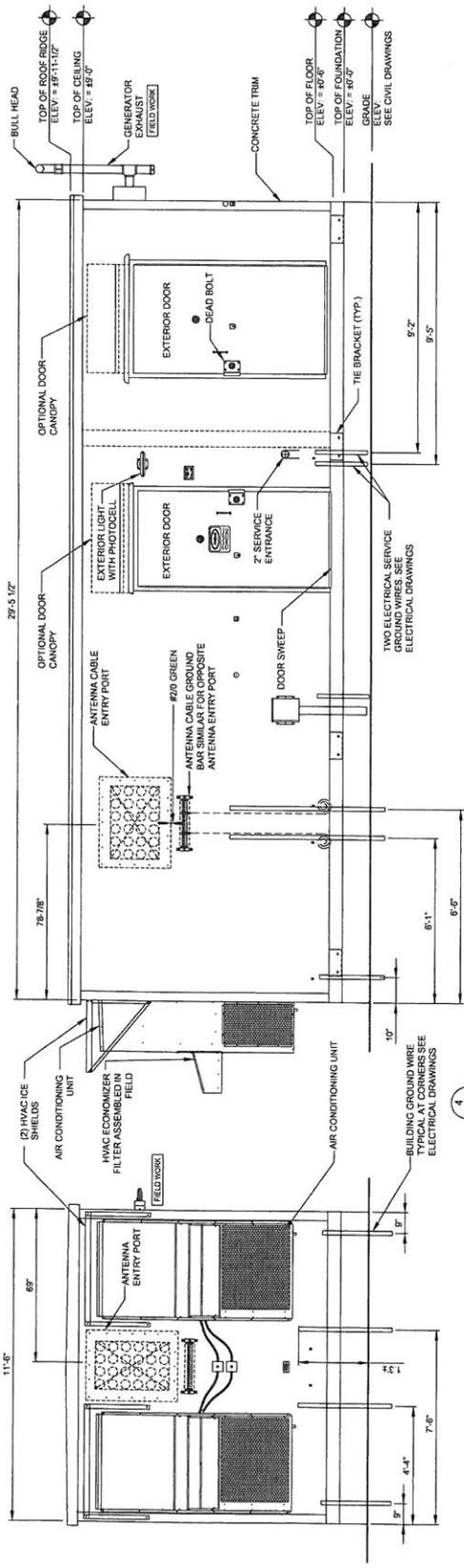
NO.	DATE	DESCRIPTION
01	9/22/14	ISSUED FOR REVIEW
02	10/1/14	REVISED BASEMENT
03	10/21/14	REVISED CLASS AREA
04	11/19/14	ISSUED FOR REVIEW
05	1/21/15	REVISED PER COMMENTS
06	5/11/15	REVISED PER COMMENTS
07	10/28/14	REVISED PER COMMENTS

LOCATION #276206
DES
JORDAN TRAIL
884 S 143TH ST
WEST DES MOINES, IA 50265

DRAWN BY:	ML
CHECKED BY:	DM
DATE:	01/22/14
PROJECT #:	72-915

SHEET TITLE
EQUIPMENT ENCLOSURE
ELEVATIONS

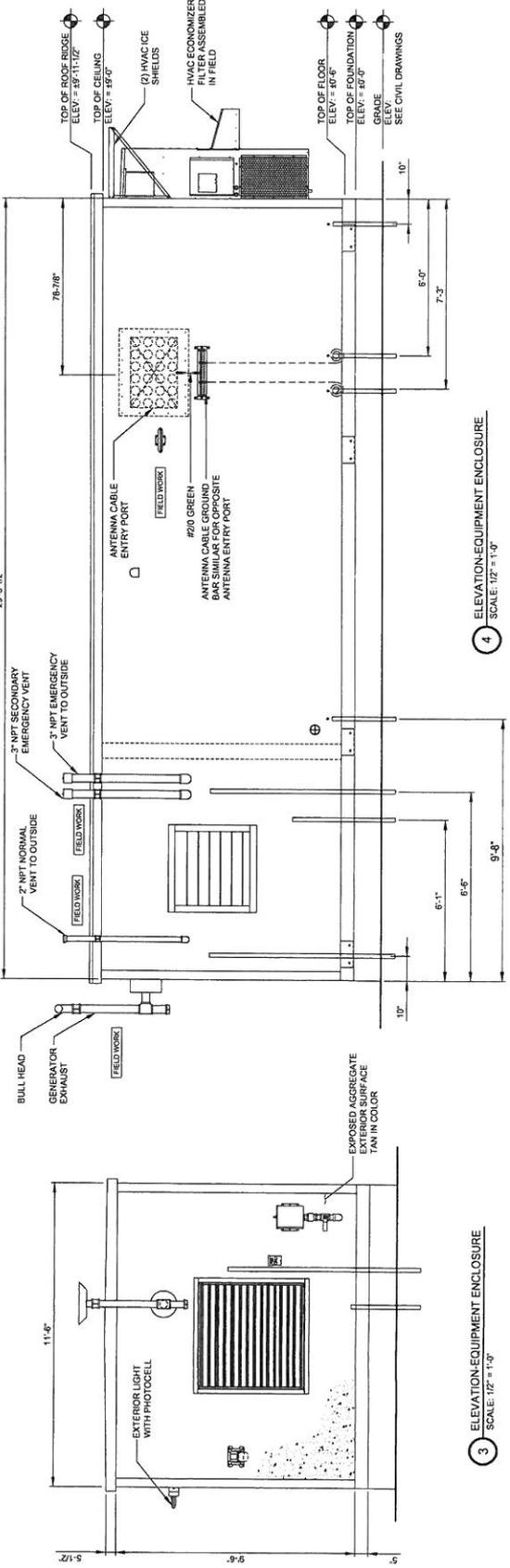
SHEET NUMBER
B-2



1 ELEVATION-EQUIPMENT ENCLOSURE
SCALE: 1/2" = 1'-0"



2 ELEVATION-EQUIPMENT ENCLOSURE
SCALE: 1/2" = 1'-0"



3 ELEVATION-EQUIPMENT ENCLOSURE
SCALE: 1/2" = 1'-0"

4 ELEVATION-EQUIPMENT ENCLOSURE
SCALE: 1/2" = 1'-0"

ELECTRICAL - GENERAL NOTES:
 THE GENERAL NOTES AND ACCOMPANYING DRAWINGS ARE TO INDICATE THE PROVISIONS AND REQUIREMENTS BY THE ELECTRICAL CONTRACTOR OF ALL LABOR, MATERIALS, AND EQUIPMENT NECESSARY TO COMPLETE THE WORK. THE CONTRACTOR SHALL VERIFY ALL INFORMATION WITH THIS ALL TEL (THE OWNER'S SITE) AND SHALL INCLUDE, BUT NOT BE LIMITED TO, THE FOLLOWING:

1. THE INSTALLATION, PROVISIONS AND CONNECTIONS OF A GROUND ROD (ELECTRODES) SYSTEM AS INDICATED IN THE DRAWINGS.
2. THE INSTALLATION AND PROVISION OF AN ELECTRICAL CONDUIT AND WIRE ASSOCIATED WITH AS INDICATED AND/OR REQUIRED ON PLANS.
3. FOR LOCAL TELEPHONE SERVICE.
4. CONDUITS SHALL BE PVC SCHED. 40 UNLESS OTHERWISE NOTED.
5. ALL FIBER LINE SHALL BE LEFT IN CONDUITS (PVC) FOR FUTURE USE.
6. THE CONTRACTOR SHALL FURNISH AND INSTALL ELECTRICAL SERVICE ENTRANCE CONDUITS, CONDUIT AND METER SERVICE EQUIPMENT WITHIN THE BUILDING.

PRIOR TO THE SUBMISSION OF BIDS, THE ELECTRICAL CONTRACTOR SHALL VERIFY ALL DETAILS AND SCHEDULES ON THE DRAWINGS AND SPECIFICATIONS PROVIDED BY THE OWNER, AND INFORMATION CHECK STRUCTURAL REQUIREMENTS AND ELECTRICAL DRAWINGS FOR SCALE, SPACE LIMITATIONS, BEAMS, DOOR SWINGS, COORDINATION, AND ADDITIONAL REQUIREMENTS TO BE MET AT DISCREPANCIES, CONFLICTS, ETC. TO THE OWNER BEFORE SUBMITTING BID.

UNLESS OTHERWISE NOTED, THE ELECTRICAL CONTRACTOR SHALL PROVIDE THE NECESSARY MOTOR STARTERS, DISCONNECTS, AND CONTROLS FOR ALL EQUIPMENT TO BE INSTALLED AND ALL ASSOCIATED EQUIPMENT SHALL BE INSTALLED AND COMPLETELY WIRED BY THE ELECTRICAL CONTRACTOR IN ACCORDANCE WITH MANUFACTURERS WIRE DIAGRAMS AND AS REQUIRED BY THE ELECTRICAL CONTRACTOR. THE ELECTRICAL CONTRACTOR SHALL VERIFY AND COORDINATE CHANGES, TESTS, AND REQUIREMENTS OF (FED) EQUIPMENT PRIOR TO ROUGH-IN OF CONDUIT AND WIRINGS TO AVOID CONFLICT.

CONTRACTOR RESPONSIBILITIES

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING AND APPROVALS AND OBTAINING OF ALL NECESSARY PERMITS, LICENSES, INSPECTIONS, AND PAID FOR ALL NECESSARY TESTING.
2. THE INSTALLATION SHALL BE IN ACCORDANCE WITH ALL APPLICABLE STATE, LOCAL, AND NATIONAL CODES AS WELL AS THE SPECIFICATIONS OF THE FOLLOWING RECOGNIZED AUTHORITIES:
 NEC NATIONAL ELECTRIC CODE
 ANSI AMERICAN NATIONAL STANDARD INSTITUTE
 IEEE INSTITUTE OF ELECTRICAL AND ELECTRONIC ENGINEERS
 ASTM MATERIALS SOCIETY FOR TESTING MATERIALS
 NEMA NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
 UL UNDERWRITERS LABORATORY, INC.
3. PRIOR TO CONTRACTING, THE ELECTRICAL CONTRACTOR SHALL CONFORM TO THE LOCAL UTILITY COMPANIES REGULATIONS AND SHALL GET THE APPROVAL FROM SAME. THE ELECTRICAL CONTRACTOR SHALL VERIFY ALL LOCAL UTILITY ADDITIONAL COSTS THEY MAY REQUIRE, AND SHALL BE INCLUDED IN HIS BID FOR CONTRACT.

SYMBOL	DESCRIPTION
---	UNDERGROUND ELECTRICAL
---	UNDERGROUND TELEPHONE
---	UNDERGROUND FIBER
---	OVERHEAD ELECTRICAL SERVICE
---	OVERHEAD TELEPHONE SERVICE

UTILITY CONTACTS:
 POWER CO. IOWA ENERGY
 JAMES KESLAR
 515-252-8472

FIBER CO.
 FOR CONTINUATION AND CONNECTION OF FIBER TO LOCAL UTILITY COMPANY SERVICE. COORDINATE WITH ELECTRICAL AND PHONE COMPANY CALLING AND LEAVING A COORDINATION.



10801 Bush Lake Rd
 Bloomington, MN 55438

600 S. 19th St
 Bloomington, IL 61808
 Tel: 817-698-8400
 Fax: 817-698-6401

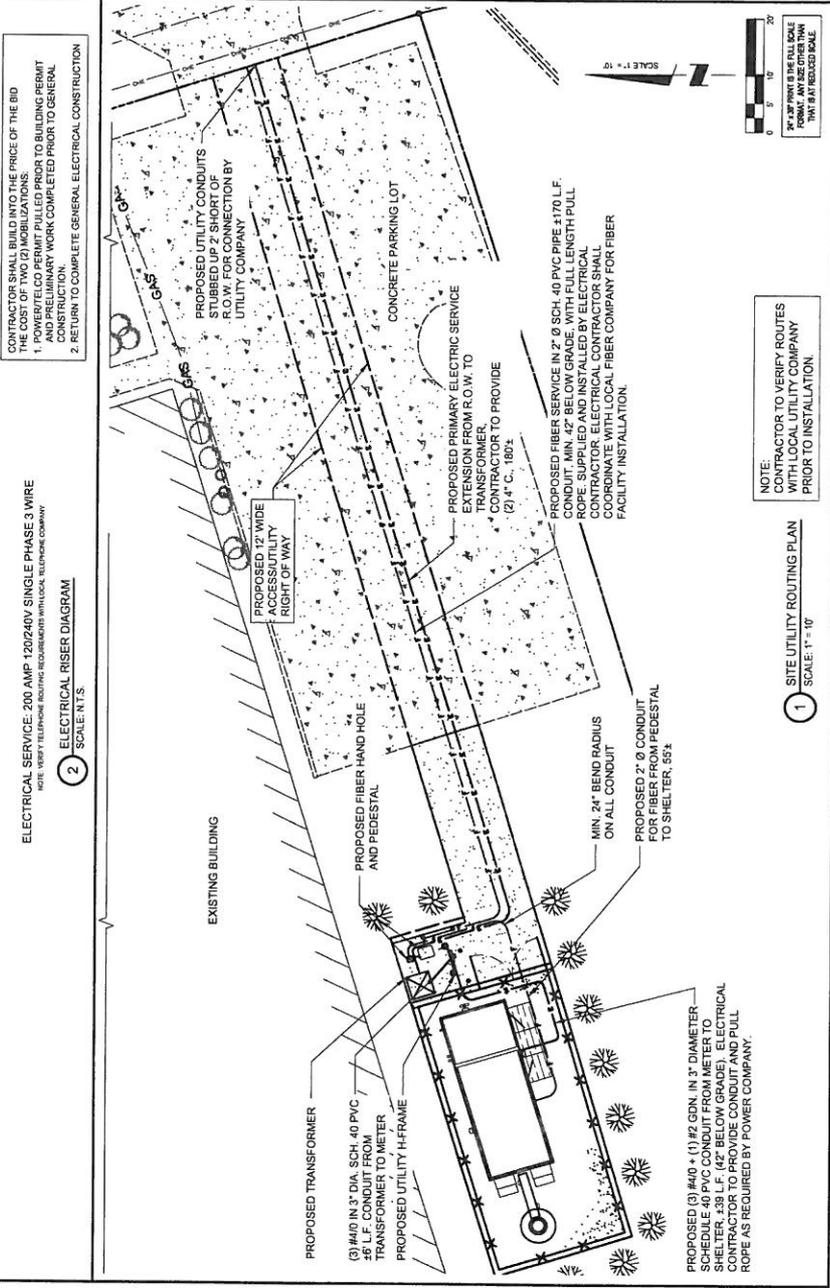
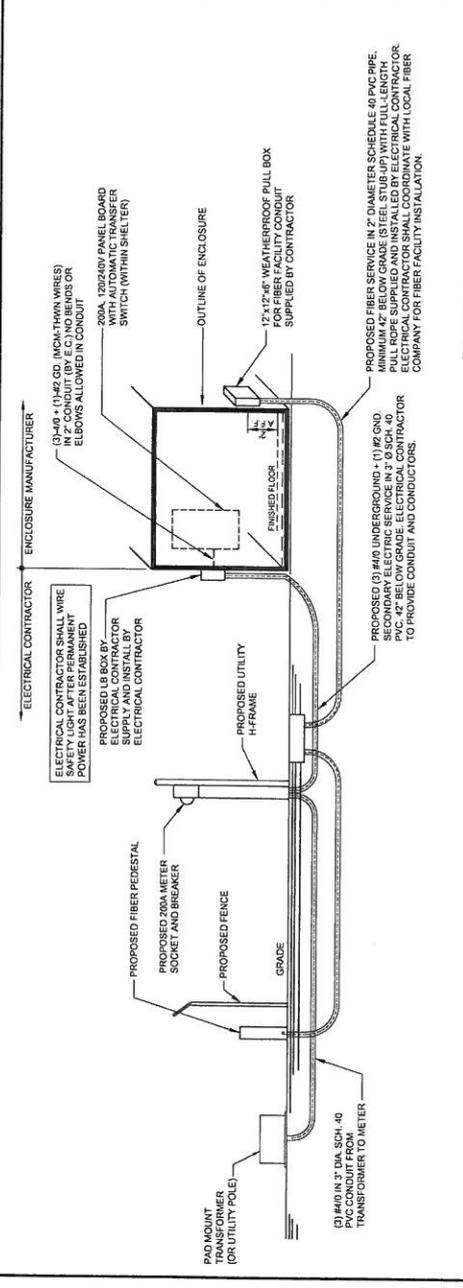
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03	02/11/14	REVISED PER COMMENTS
04	07/14/14	ISSUED FOR REVIEW
05	07/28/14	REVISED PER COMMENTS
06	10/28/14	REVISED PER COMMENTS

LOCATION #276206
DES JORDAN TRAIL
 801 S 19TH ST
 WEST DES MOINES, IA 50265

UTILITY ROUTING PLAN

SHEET NUMBER
E-1

DRAWN BY: ML
 CHECKED BY: DMI
 DATE: 01/22/14
 PROJECT #: 72-015



ELECTRICAL CONTRACTOR SHALL:
 (1) #40 (1 1/2" O.D. INCH THIN WALL) IN 2" CONDUIT (BY E.C.) NO BENDS OR ELBOWS ALLOWED IN CONDUIT
 (2) 200A 120/240V PANEL BOARD WITH AUTOMATIC TRANSFER SWITCH (WITHIN SHELTER)
 (3) 1 1/2" x 4" x 6" WEA THERPROOF PULL BOX FOR FIBER FACILITY CONDUIT SUPPLIED BY CONTRACTOR
 (4) PROPOSED FIBER SERVICE IN 2" DIA. SCHEDULE 40 PVC PIPE, MINIMUM 4" BELOW GRADE (STEEL STUB UP WITH FULL-LENGTH PVC. 4" BELOW GRADE. ELECTRICAL CONTRACTOR SHALL COORDINATE WITH LOCAL FIBER COMPANY FOR FIBER FACILITY INSTALLATION.
 (5) PROPOSED (3) #40 UNDERGROUND (1) #6 CONDUIT SECONDARY ELECTRICAL SERVICE IN 3" DIA. 40 PVC. 4" BELOW GRADE. ELECTRICAL CONTRACTOR SHALL PROVIDE CONDUIT AND CONDUCTORS.
 (6) PROPOSED 200A METER SOCKET AND BREAKER
 (7) PROPOSED 200A METER SOCKET AND BREAKER
 (8) PROPOSED 18 BOX BY ELECTRICAL CONTRACTOR SUPPLY AND INSTALL BY ELECTRICAL CONTRACTOR
 (9) PROPOSED UTILITY H-FRAME
 (10) PROPOSED 12" WIDE ACCESS UTILITY RIGHT OF WAY
 (11) PROPOSED UTILITY CONDUITS STUBBED UP 2' SHORT OF R.O.W. FOR CONNECTION BY UTILITY COMPANY
 (12) PROPOSED PRIMARY ELECTRIC SERVICE EXTENSION FROM R.O.W. TO TRANSFORMER, CONTRACTOR TO PROVIDE (2) 4" C., 180'
 (13) PROPOSED FIBER SERVICE IN 2" SCH. 40 PVC PIPE 4.170 L.F. MIN. 4" BELOW GRADE WITH FULL LENGTH PULL ROPE SUPPLIED AND INSTALLED BY CONTRACTOR. ELECTRICAL CONTRACTOR SHALL COORDINATE WITH LOCAL FIBER COMPANY FOR FIBER FACILITY INSTALLATION.
 (14) MIN. 24" BEND RADIUS ON ALL CONDUIT
 (15) PROPOSED 2" DIA. CONDUIT FOR FIBER FROM PEDESTAL TO SHELTER, 55'
 (16) PROPOSED (3) #40 (1 1/2" O.D. INCH THIN WALL) SCHEDULE 40 PVC CONDUIT FROM METER TO SHELTER, 4.38 L.F. (42" BELOW GRADE). ELECTRICAL CONTRACTOR TO PROVIDE CONDUIT AND PULL ROPE AS REQUIRED BY POWER COMPANY.

- ELECTRICAL WIRING AND RACEWAYS**
1. ALL WIRING OF ALL KINDS MUST BE INSTALLED IN CONDUIT, UNLESS OTHERWISE NOTED OR APPROVED BY THE ENGINEER.
 2. ALL RACEWAYS SHALL BE COVERED, TYPE, THICKNESS AND ACCORDING WITH THE (NCEC) NATIONAL ELECTRICAL CODE OR AS INDICATED ON PLANS.
 3. RACEWAYS SHALL BE STEEL, GALVANIZED WITH SIZE AS NOTED ON PLANS. ALL RACEWAYS SHALL BE APPROVED PRIOR TO INSTALLATION. ALL RACEWAYS SHALL BE APPROVED PRIOR TO INSTALLATION. NATIONAL ELECTRICAL CODE STANDARDS AND AS APPROVED BY THE ENGINEER.
 4. JUNCTION BOXES OR PULL BOXES SHALL MEET (N.E.C.) NATIONAL ELECTRICAL CODE STANDARDS AND AS APPROVED BY THE ENGINEER.
 5. THE RACEWAY AND WIRING INSTALLATION SHALL BE GROUNDED PERMANENTLY AND EFFECTIVELY IN ACCORDANCE WITH ARTICLE 250 OF THE (N.E.C.) NATIONAL ELECTRICAL CODES.
 6. THE CONTRACTOR SHALL BE AWARE THAT ALL STATE AND LOCAL CODES SHALL APPLY TO THIS INSTALLATION AND MUST BE ADHERED TO.

- ELECTRICAL SYMBOLS**
- [E] SURFACE ELECTRICAL PANELBOARD
 - [M] ELECTRIC SERVICE METER
 - [T] TRANSFORMER
 - E— UNDERGROUND ELECTRICAL CONDUIT RUN
 - T— UNDERGROUND TELEPHONE CONDUIT RUN
 - G— SOLID BARE COPPER WIRE #40 THND
 - G— EQUAL OR AS APPROVED
 - G— 87 OHM, 18" OF ONE COPPER CLAD GROUND ROD

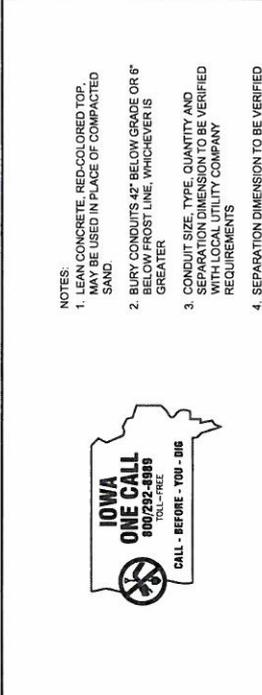
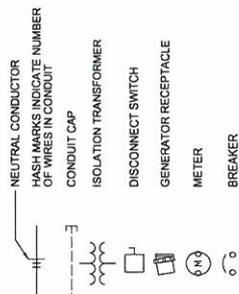
ELECTRICAL ABBREVIATIONS

- MDO MOUNTED
- MFC MOUNTED
- MEC NATIONAL ELECTRIC CODE
- FB PULL BOX
- PNL PANEL
- RGS RIGID GALVANIZED STEEL CONDUIT
- STG TELEPHONE TERMINAL CABINET
- V VOLTS
- WA WIRE MAN
- WP WEATHERPROOF
- ATW ATTACHED TO WALL
- CTW CLOSE TO WALL
- EGB EXTERNAL GROUND BUS BAR
- EGR EMERGENCY GENERATOR RECEPTACLE
- GF GROUND FAULT INTERRUPTOR
- HP HOUSEPOWER
- KV KILOWATTS
- MAX MAXIMUM
- MFR MANUFACTURER

UTILITIES GENERAL NOTES

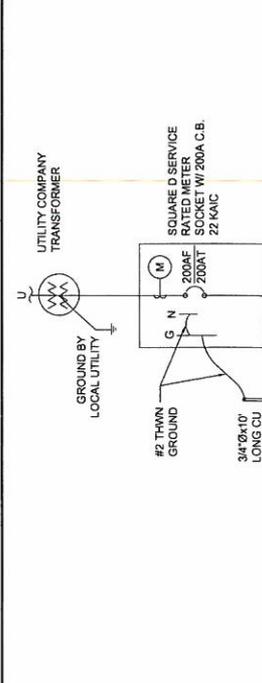
1. UTILITIES POINTS OF SERVICE TERMINALS SHOWN ARE BASED ON PRELIMINARY INFORMATION ONLY, PROVIDED BY THE UTILITY COMPANIES AND ARE FOR BID PURPOSE ONLY.
2. CONTRACTOR SHALL COORDINATE WITH UTILITY COMPANY FOR FINAL AND EXACT WORK MATERIALS REQUIREMENTS AND ONLY CONTRACTOR SHALL FURNISH AND INSTALL ALL CONDUIT, PULL WIRES, CABLES, PULLBOXES, CONCRETE ENCASUREMENT OF RIGID CONDUIT, TRENCHING, BACKFILL, PAY ALL UTILITY COMPANY FEES AND INCLUDE ALL REQUIREMENTS IN SCOPE OF WORK.

LEGEND



- NOTES:**
1. LEAN CONCRETE, RED-COLORED TOP, MAY BE USED IN PLACE OF COMPACTED SAND.
 2. BURY CONDUITS 42" BELOW GRADE OR 6" BELOW FROST LINE, WHICHEVER IS GREATER.
 3. CONDUIT SIZE, TYPE, QUANTITY AND SEPARATION DIMENSION TO BE VERIFIED WITH LOCAL UTILITY COMPANY REQUIREMENTS.
 4. SEPARATION DIMENSION TO BE VERIFIED WITH LOCAL UTILITY COMPANY REQUIREMENTS.

1 UTILITY TRENCH DETAIL
SCALE: N.T.S.



- NOTES:**
- #2 THWN GROUND TO LOCAL UTILITY TRANSFORMER
 - SQUARE D SERVICE RATED METER SOCKET W/ 200A C.B. 22 KAIC
 - (3) #4/0 (1) #2 GND. IN 3" C
 - 200A GENERATOR
 - 200A LOAD CENTER WITH AUTOMATIC TRANSFER SWITCH
 - TO BRANCH CIRCUITS
 - 3/4" Ø x 10' LONG CU ROD

2 SINGLE LINE DIAGRAM
N.T.S.

verizon wireless

10801 Bush Lake Rd
Bloomington, MN 55438

TERRA CONSULTING SERVICES, LTD.

600 Basile Highway
10400
P.O. Box 47
Ridgeville, IL 60068
Fax: 847/698-6401

REVISIONS

NO	DESCRIPTION	DATE	BY
10	ISSUED FOR REVIEW	01/22/14	ML
11	REVISED PER COMMENTS	02/11/14	ML
12	ISSUED FOR REVIEW	02/11/14	ML
13	REVISED PER COMMENTS	02/11/14	ML
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15	REVISED PER COMMENTS	02/11/14	ML
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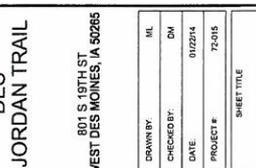
LOCATION #276206

DES JORDAN TRAIL

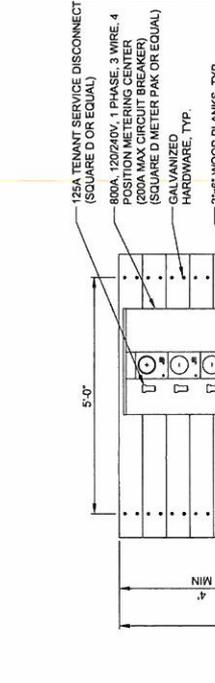
801 S. 10TH ST
WEST DES MOINES, IA 50265

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NO	DESCRIPTION	DATE	BY
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12	ISSUED FOR REVIEW	02/11/14	ML
13	REVISED PER COMMENTS	02/11/14	ML
14	ISSUED FOR REVIEW	02/11/14	ML
15	REVISED PER COMMENTS	02/11/14	ML
16	ISSUED FOR REVIEW	02/11/14	ML



3 FIBER HAND HOLE & PEDESTAL DETAIL
SCALE: N.T.S.



4 H-FRAME W/ MULTIPLE METER RACK DETAIL
SCALE: N.T.S.

ELECTRICAL DETAILS

SHEET TITLE: 72-015

PROJECT #: 0102714

DATE: 01/22/14

DM

ML

SHEET NUMBER: E-2

ELECTRICAL - GROUNDING ROD SYSTEM

1. ALL GROUNDING CONNECTIONS SHALL BE MADE BY THE EXOTHERMIC PROCESS CONNECTIONS SHALL INCLUDE CABLE TO CABLE SPLICES, ETC. ALL CABLE TO GROUND RODS, GROUND RODS SPLICES AND LIGHTNING PROTECTION SYSTEM AS INDICATED. GROUND FOUNDATION ONLY AS INDICATED BY PM. ALL MATERIALS USED (MOLDS, WELDING METAL, TOOLS, ETC.) SHALL BE BY RECOMMENDATIONS AND INSTALLED PER MANUFACTURERS REQUIREMENTS. ALL GROUNDING RODS SHALL HAVE A MINIMUM 24" BENDING RADIUS.
2. ALL EXOTHERMIC CONNECTIONS ON GALVANIZED SURFACES SHALL BE CLEANED THOROUGHLY AND COLORED TO MATCH SURFACE WITH (2) TWO COATS OF SHERWIN-WILLIAMS GALVITE (WHITE) PAINT B50W3 (OR EQUAL) OR SHERWIN-WILLIAMS SILVERBRITE (ALUMINUM) B58S11 (OR EQUAL).
3. ALL ELECTRICAL & MECHANICAL GROUND CONNECTIONS SHALL HAVE ANTI-OXIDANT COMPOUND APPLIED TO CONNECTION.
4. GROUND RODS SHALL BE INSTALLED VERTICALLY IN THE EXISTING UNDISTURBED EARTH.
5. GROUND RING AROUND BUILDING SHALL BE BARE COPPER. BARE EARTH AT A MINIMUM DEPTH OF 42 INCHES. ALL CONDUCTOR BENDS SHALL NOT BE LESS THAN A MINIMUM RADIUS OF EIGHT INCHES (1/2").
6. THE FENCE LINE WILL BE GROUNDING AT THE CORNER AND 25 FEET OF TOWER AS INDICATED ON DRAWINGS. GROUND EACH GATE POST AND CORNER POST. GROUND CONNECTIONS TO FENCE POSTS SHALL BE MADE BY THE EXOTHERMIC PROCESS AND INSTALLED PER MANUFACTURERS RECOMMENDATIONS AND PROCEDURES. ALL OTHER CONNECTIONS FOR THE GROUND GRID SYSTEM SHALL BE MADE BY THE EXOTHERMIC PROCESS AND INSTALLED PER MANUFACTURERS RECOMMENDATIONS AND PROCEDURES.
7. FENCE/GATE, GROUND FENCE POSTS WITHIN 6 FEET OF ENCLOSURE AND 25 FEET OF TOWER AS INDICATED ON DRAWINGS. GROUND EACH GATE POST AND CORNER POST. GROUND CONNECTIONS TO FENCE POSTS SHALL BE MADE BY THE EXOTHERMIC PROCESS AND INSTALLED PER MANUFACTURERS RECOMMENDATIONS AND PROCEDURES. ALL OTHER CONNECTIONS FOR THE GROUND GRID SYSTEM SHALL BE MADE BY THE EXOTHERMIC PROCESS AND INSTALLED PER MANUFACTURERS RECOMMENDATIONS AND PROCEDURES.
8. ALL DETAILS ARE SHOWN IN GENERAL TERMS. ACTUAL GROUNDING CONNECTIONS AND CONSTRUCTION MAY VARY DUE TO THE SPECIFIC SITE CONDITIONS.

LEAD IDENTIFICATION & DESCRIPTION:

- | | | |
|-------|--|-------------|
| 1 | RING, EXTERNAL BURIED W/ RODS | #2 SBTC |
| 1A | RING, CONCRETE ENCASED | #2 SBTC |
| 2 | DEEP ANODE (TO IMPROVE OHMS) | ROD OR PIPE |
| 3 | RING TO BLDG STL FRAME | #2 SBTC |
| 4 | MAN AC PANEL NEUTRAL BUS TO (2) GROUND RODS, ISOLATED FROM LEAD #1 | NEC 250.66 |
| 5 | RING TO GROUND BAR | (2) #2 SBTC |
| 6 | RING TO EXT MTL OBJECT | #2 SBTC |
| 7 | RING TO EXT MTL OBJECT | #2 SBTC |
| 8 | AC PANEL TO WATER METER | NEC 250.66 |
| 9 | EXT WATER TO INT WATER PIPES | NEC 250.66 |
| 10 | INT WATER TO WATER METER | NEC 250.66 |
| 11-12 | NOT USED | |
| 13 | AC PANEL TO MGB | NSTD33-9 |
| 14 | MGB/FGB TO BLDG STL FRAME | NSTD33-9 |
| 14C | MGB/FGB TO ROOFWALL MTL PNL | #20 I-STR |
| 15 | MGB/FGB TO FGB-HE SAME FLOOR | #20 I-STR |
| 16 | NOT USED | |
| 16A | ECFGP TO CABLE ENTRY RACK | #10 I-STR |
| 17 | MGB TO CABLE SHIELDING | #6 I-STR |
| 17A | ECFGP TO CABLE SHIELDING | #6 I-STR |
| 17B | MGB/FGB TO F-O SPLICE SHELF | #1 I-STR |
| 18 | LOWEST MGB/FGB TO HIGHEST FGB | #20 I-STR |
| 19 | LEAD #8 TO OTHER FGBS, 45° | #20 I-STR |
| 20 | MGB/FGB TO BRANCH AC PNL | #6 I-STR |
| 20A | NEAREST GROUND TO DISCONNECT PNL | NEC 250.66 |
| 21 | MGB/FGB TO AC PANEL | #6 I-STR |
| 21A | INTERIOR GREEN HALO | #2 SBTC |
| 21B | INT HALO TO EXT RING | #2 SBTC |
| 21C | INT HALO TO EQUIPMENT MTL | #6 I-STR |
| 22 | ROOF TOWER RING TO ROOF GRND | NFPA 780 |
| 23 | MGB/FGB TO ECPGB, SAME FLOOR | #1 I-STR |
| 23A | MGB/FGB TO CKR-HF LNR PROT | #6 I-STR |
| 24 | ECFGP TO EACH PROTECTOR ASSEMBLY | #6 I-STR |
| 24A | LOWER PROT ASSY TO UPPER | #6 I-STR |

9. UTILITY COMPANY COORDINATION. ELECTRICAL CONTRACTOR SHALL CONFIRM THAT ALL WORK IS IN ACCORDANCE WITH LOCAL UTILITY COMPANY BEFORE SUBMITTING THE BID. THE CONTRACTOR SHALL CHECK WITH THE UTILITY COMPANIES SUPPLYING SERVICE TO THIS PROJECT AND SHALL DETERMINE FROM THEM ALL EQUIPMENT AND CHARGES WHICH THEY WILL REQUIRE AND SHALL INCLUDE THE COST IN THE BID.
 10. GROUND TEST: GROUND TESTS SHALL BE PERFORMED AS REQUIRED BY LESSEE STANDARD PROCEDURES. GROUND GRID RESISTANCE SHALL NOT EXCEED 5 OHMS.
 11. GROUND RINGS ARE TO BE INSTALLED A MINIMUM OF 2'-0" FROM EQUIPMENT AND TOWER.
- GROUNDING NOTES:**
1. GROUND RODS SHALL BE INSTALLED 6" MIN. BELOW FROST.
 2. GROUND RODS SHALL BE INSTALLED 6" MIN. BELOW FROST.
 3. ALL BELOW GRADE GROUND RINGS AND GROUND LEADS SHALL BE # 2 AWG SOLID, TINNED BARE COPPER WIRE.
 4. ALL BELOW GRADE CONNECTIONS SHALL BE EXOTHERMIC WELDS.
 5. UNLESS PROVIDED W/ A FACTORY APPLIED LEAD, ALL CONNECTIONS TO GROUND BARS SHALL BE BURNDY HYGROUND COMPRESSION LUGS OR EQUAL.
 6. STEEL SHALL BE TO BARE METAL, GROUND GALV. FINISH OR PAINT OFF PRIOR TO WELDING. REPAIR GALV. FINISH OR PAINT AS REQUIRED. MATCH PAINT COLOR.
 7. ALL LUG CONNECTORS SHALL BE 2-HOLE LONG BARREL COMPRESSION TYPE OR APPROVED EQUAL.
 8. ALL HARDWARE TO ATTACH MECHANICAL GROUND CONNECTIONS SHALL BE STAINLESS STEEL.
 9. ALL MECHANICAL CONNECTIONS SHALL HAVE NOX OR APPROVED EQUAL APPLIED BETWEEN COMPRESSION LUG AND FIXTURE.



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2	02/17/14	REVISED FOR REVIEW
3	02/17/14	REVISED FOR REVIEW
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5	02/17/14	REVISED FOR REVIEW
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8	02/17/14	REVISED FOR REVIEW
9	02/17/14	REVISED FOR REVIEW
10	02/17/14	REVISED FOR REVIEW

LOCATION #276206

DES JORDAN TRAIL

801 S 19TH ST
WEST DES MOINES, IA 50265

DRAWN BY	ML
CHECKED BY	DM
DATE	01/22/14
PROJECT #	724015

SHEET TITLE
GROUNDING DETAILS

SHEET NUMBER
G-0

NO.	DATE	DESCRIPTION
1	01/22/14	ISSUED FOR REVIEW
2	02/27/14	REVISED FOR ASSET
3	03/24/14	REVISED FOR LEASE AREA
4	04/14/14	ISSUED FOR REVIEW
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6	05/28/14	REVISED FOR COMMENTS
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LOCATION #276206

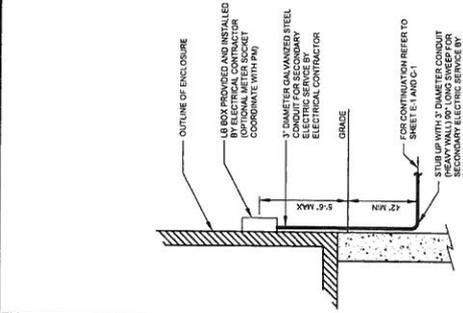
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801 S 19TH ST
WEST DES MOINES, IA 50265

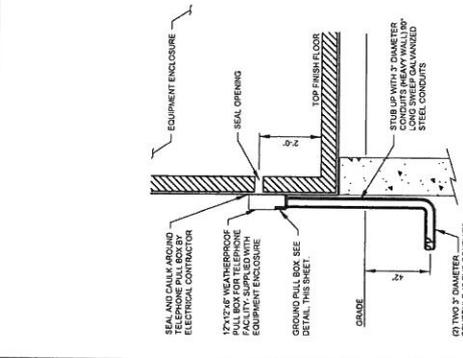
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DATE: 01/22/14
PROJECT #: 72-015

SHEET TITLE
ELECTRICAL AND GROUNDING DETAILS

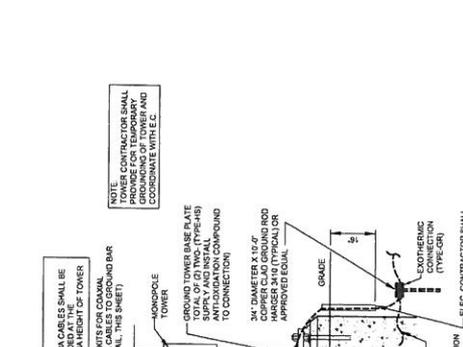
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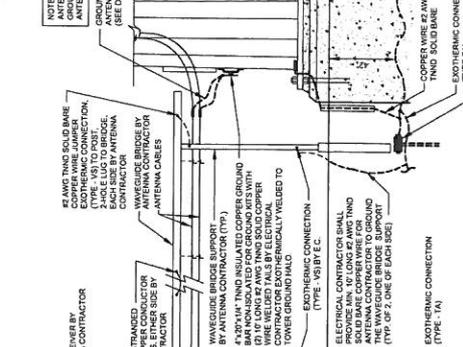
1 ANTENNA CABLE AND WAVEGUIDE BRIDGE GROUNDING DETAIL
N.T.S.



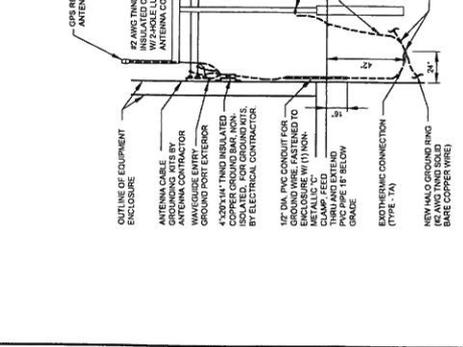
2 TELEPHONE SERVICE ENTRANCE
N.T.S.



3 UNDERGROUND ELEC. SERVICE DETAIL
N.T.S.



4 HVAC METER BASE METALLIC COMPONENTS GROUNDING DETAIL
N.T.S.



5 EQUIPMENT ENCLOSURE GROUNDING
N.T.S.



6 TELCO FACILITY GROUND
N.T.S.



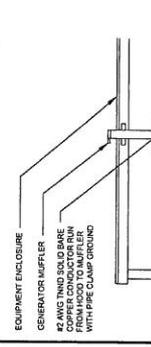
7 ELECTRIC SERVICE GROUNDING DETAIL
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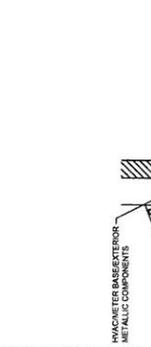
8 ENCLOSURE GROUNDING DETAIL
N.T.S.



9 UNDERGROUND ELEC. SERVICE DETAIL
N.T.S.



10 ENCLOSURE GROUNDING DETAIL
N.T.S.



11 ENCLOSURE GROUNDING DETAIL
N.T.S.



12 ENCLOSURE GROUNDING DETAIL
N.T.S.

NO.	DATE	DESCRIPTION
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04	02/17/14	REVISED EASEMENT
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06	02/17/14	ISSUED FOR REVIEW
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LOCATION #276206
DES
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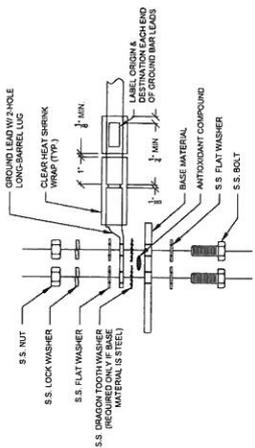
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PROJECT #:	75-015

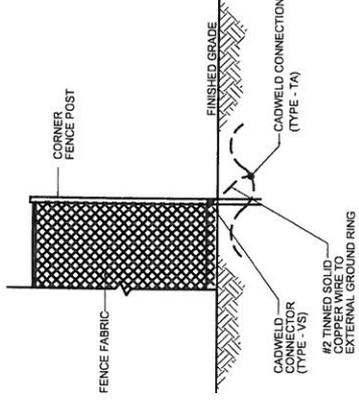
SHEET TITLE
GROUNDING DETAILS

SHEET NUMBER
G-5

- NOTES:
1. ALL HARDWARE 18-8 STAINLESS STEEL INCLUDING BELLEVILLE. COAT ALL SURFACES WITH KOPR-SHIELD BEFORE MATING.
 2. FOR GROUND BARS TO STEEL, ONLY INSERT A DRAGON TOOTH WASHER BETWEEN LUG AND STEEL. COAT ALL SURFACES WITH KOPR-SHIELD.
 3. GROUND BARS, INSTALL BOLT HEAD TOWARD WALL.
 4. ENCLOSURES, INSTALL BOLT HEAD ON OUTSIDE OF ENCLOSURE.

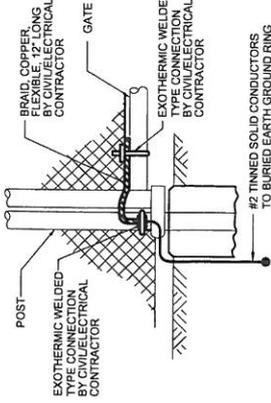


3 GROUND LIG INSTALLATION DETAIL
N.T.S.



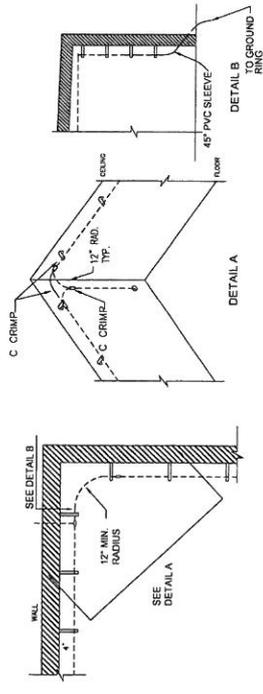
NOTE: GROUND WIRES SHALL BE ROUTED AND CADWELDED INSIDE THE FENCED COMPOUND.

2 FENCE GROUNDING DETAIL
N.T.S.



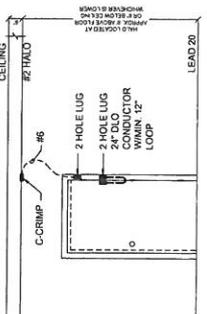
1 GATE GROUNDING DETAILS
N.T.S.

NOTE:
CONTRACTOR TO VERIFY ALL INTERNAL GROUNDING IS CONNECTED AND INSTALLED ACCORDING TO VERIZON STANDARDS. CONTRACTOR SHALL COMPLETE ANY PORTION OF THE INTERNAL GROUNDING WHICH MAY HAVE BEEN AN OVERSIGHT BY THE SHELTER MANUFACTURER.



4 HALO DETAIL
N.T.S.

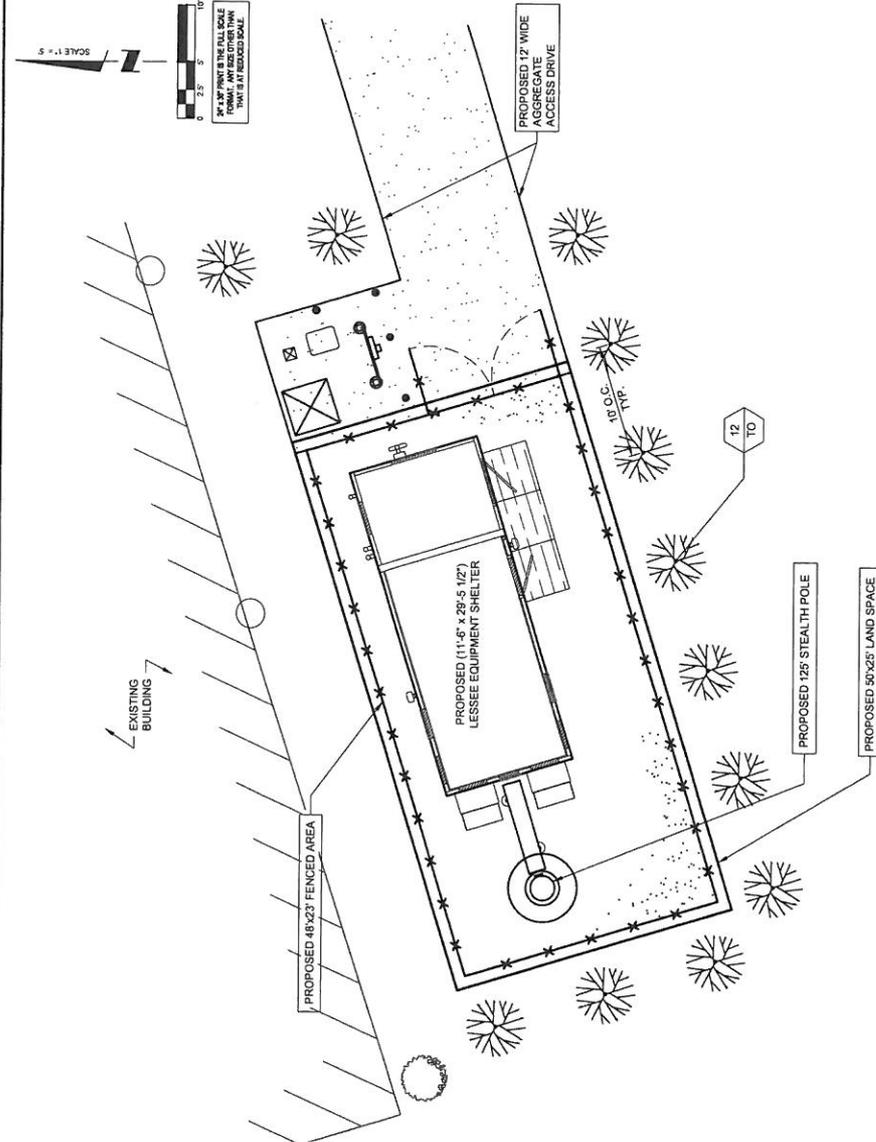
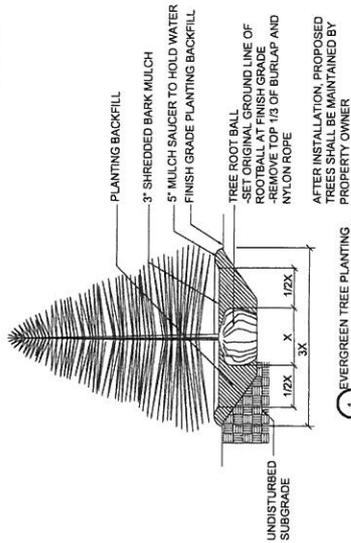
NOTE:
CONTRACTOR TO VERIFY ALL INTERNAL GROUNDING IS CONNECTED AND INSTALLED ACCORDING TO VERIZON STANDARDS. CONTRACTOR SHALL COMPLETE ANY PORTION OF THE INTERNAL GROUNDING WHICH MAY HAVE BEEN AN OVERSIGHT BY THE SHELTER MANUFACTURER.



5 DOOR FRAME BONDING DETAIL
N.T.S.

GENERAL LANDSCAPE NOTES

1. PRUNE NEWLY INSTALLED SHRUBS. WORK SHALL BE DONE BY EXPERIENCED PERSONNEL TO THE ACCEPTED HORTICULTURAL AND ARBORICULTURAL STANDARDS. PRUNING SHALL RESULT IN A LOOSE OUTLINE CONFORMING TO THE GENERAL SHAPE OF THE SHRUB TYPE. DO NOT USE HEDGE SHEARS.
2. ALL PLANTING STOCK SHALL BE NURSERY-GROWN IN ACCORDANCE WITH GOOD HORTICULTURAL PRACTICE. PLANTS SHALL BE FREE OF DISEASE, INSECTS, EGGS, LARVAE AND DEFECTS SUCH AS KNOTS, SUN-SCALD, INJURIES, DAMAGE TO THE ROOT SYSTEM, AND UNHEALTHY OR UNUSUAL VIGOROUS AND UNIFORM GROWTH. TOPICAL OF THE SPECIES SHOULD BE VARIETY, WELL-FORMED, FREE FROM IRREGULARITIES WITH THE MINIMUM QUALITY AND SIZE CONFORMING TO AMERICAN STANDARD FOR NURSERY STOCK.
3. GUARANTEE: WARRANT ALL PLANT MATERIAL TO BE TRUE TO BOTANICAL NAME AND SPECIFIED SIZE. AFTER COMPLETION OF PLANTING, ALL PLANT MATERIALS SHALL BE WARRANTED AGAINST DEFECTS, INCLUDING DEATH AND UNSATISFACTORY GROWTH FOR A WARRANTY PERIOD OF ONE YEAR. THE CONTRACTOR WILL NOT BE RESPONSIBLE FOR DEFECTS RESULTING FROM NEGLECT OR FROM PHENOMENA OR INCIDENTS BEYOND THE CONTROL OF THE CONTRACTOR WHICH RESULT FROM NATURAL CAUSES SUCH AS FLOODS, STORMS, FIRES OR VANDALISM.
4. REPLACEMENTS: DURING THE WARRANTY PERIOD, REPLACE ONE TIME AT NO ADDITIONAL COST TO THE OWNER, PLANT MATERIALS THAT ARE DEAD, OR IN THE OPINION OF THE LANDSCAPE ARCHITECT, IN AN UNHEALTHY OR UNSIGHTLY CONDITION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPLACEMENT FROM THE SITE AT CONTRACTOR'S EXPENSE. REPLACEMENTS ARE TO BE MADE IN LATE SPRING OR EARLY FALL OF THE SUBSEQUENT PLANTING SEASON. RESTORE AREAS DISTURBED BY REPLACEMENT OPERATIONS.
5. MULCHING SHALL BE DONE WITHIN 48 HOURS AFTER PLANTING. MULCH SHRUB BEDS TO A UNIFORM DEPTH OF THREE INCHES. MULCH SHALL BE A COMPOSTED PINE BARK MULCH FREE OF FOREIGN MATERIAL AND LARGE PIECES OVER THREE INCHES LONG. DO NOT MULCH TREE AND SHRUB PLANTING PITS.
6. TOPSOIL SHALL CONSIST OF FERTILE NATURAL LOAM, CONTAINING A MINIMUM OF 1% NITROGEN AND 1% PHOSPHORUS. SOIL SHALL BE APPROVED BY THE OWNER. IT SHALL BE FREE OF MIXTURES OF SUBSON, AND FREE OF CRAB GRASS, ROOTS, STICKS AND OTHER EXTRANEOUS MATTER, AND SHALL NOT BE USED FOR PLANTING OPERATIONS WHILE IN A FROZEN OR MUDDY CONDITION.
7. REPAIR ALL TURF AREAS BY SEEDING. SEEDING INSTALLATION SHALL BE EXECUTED ONLY AFTER ALL FINISH GRADING HAS BEEN COMPLETED. NO SEEDING WORK SHALL BE DONE PAST SEPTEMBER 15, UNLESS APPROVED BY THE OWNER'S REPRESENTATIVE.
8. IMPROVED BLEND SOIL MATCH EXISTING TURF OR BE A 50/50 MIX OF CERTIFIED IMPROVED BLEND SOIL AND EXISTING TURF. THE MIX SHALL BE APPROVED BY THE OWNER'S REPRESENTATIVE PRIOR TO PLANTING. SEEDING SHALL BE APPLIED AT A MINIMUM RATE OF 120 POUNDS PER ACRE. FUTERRA BLANKET, OR EQUAL, SHALL BE USED FOR EROSION CONTROL. MULCH WHERE NECESSARY IN LIEU OF HYDRO MULCH.
9. PLANT MATERIAL SHALL CONFORM WITH THE CURRENT AMERICAN STANDARDS FOR NURSERY STOCK PUBLISHED BY THE AMERICAN ASSOCIATION OF NURSERMEN FOR THAT TYPE OF TREE OR SHRUB AT THE TIME OF INSTALLATION.
10. ALL TREES SHALL BE GROWN IN A NURSERY LOCATED IN THE NORTHERN HALF OF THE STATE OF ILLINOIS AND LICENSED BY THE STATE OF ILLINOIS.
11. THE PLANTING SEASON SHALL BE APPROXIMATELY OCTOBER 15 TO DECEMBER 1, AND MARCH 15 TO MAY 1.



PLANT LIST

SYMBOL	BOTANICAL NAME	COMMON NAME	QUANTITY	SIZE	COMMENTS
3	THUJA OCCIDENTALIS	AMERICAN ARBORVITAE	12	5 FT. MIN.	B & B (BALLED & BURLAPPED)



NO	DATE	DESCRIPTION
1	01/22/14	ISSUED FOR REVIEW
2	02/11/14	REMOVED EASTMENT
3	02/24/14	REMOVED LEASE AREA
4	04/14/14	ISSUED FOR REVIEW
5	07/14/14	REMOVED PER COMMENTS
6	10/28/14	ISSUED FOR REVIEW

LOCATION #276206
DES JORDAN TRAIL
801 S 19TH ST
WEST DES MOINES, IA 50265

DRAWN BY: ML
CHECKED BY: DM
DATE: 01/22/14
PROJECT #: 75015

SHEET TITLE: LANDSCAPE PLAN
SHEET NUMBER: L-1

10801 Bush Lake Rd
Bloomington, MN 55438

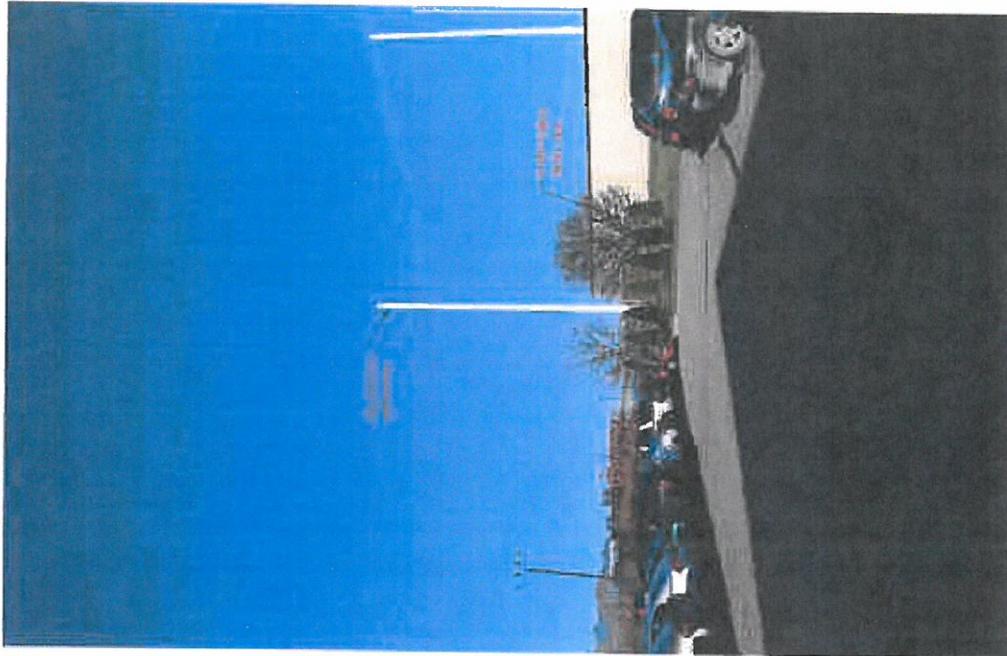
VERIZON wireless

TERRA CONSULTING GROUP, LLC
500 Busse Highway
Park Ridge, IL 60068
Fax: 847/698-6401
Tel: 847/698-6400

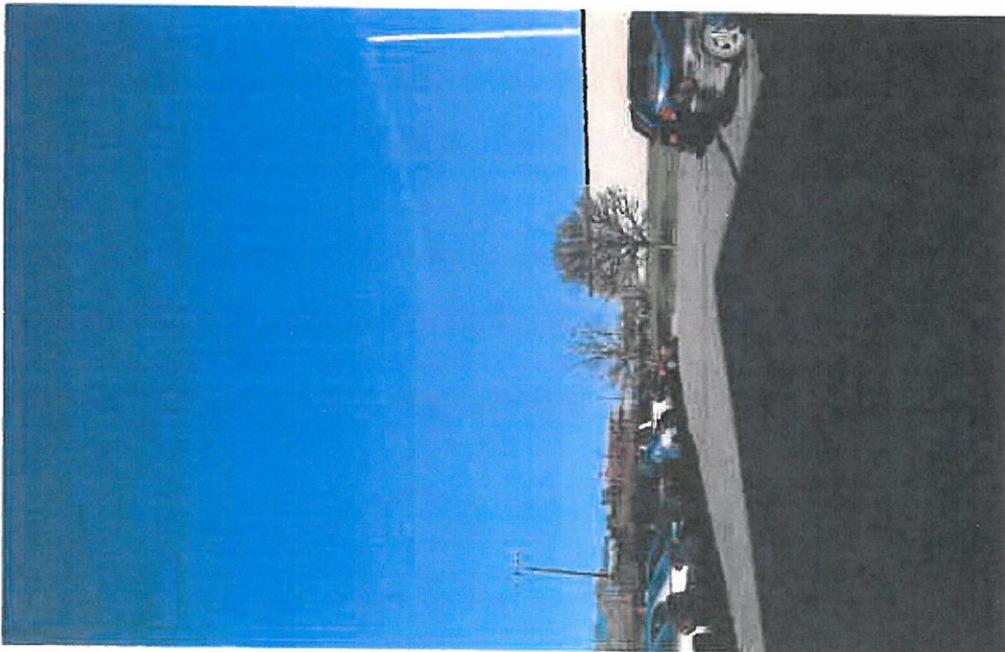


DESC Jordan Trail

Stealth Monopole



AFTER



BEFORE